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JOURNAL
OF THE
ROYAL
STATISTICAL SOCIETY.

(Founded 1834.)

INCORPORATED BY ROYAL CHARTER 1887,

VOL. LVII.—YEAR 1894.

LONDON:
EDWARD STANFORD, 26 AND 27, COCKSPUR STREET,
CHARING CROSS, S.W.

1894.

68945.

ERRATA.

PART II.

Page 341, lines 4-7. This sentence is only true of a *simple* machine; by means of relays, other combinations can be worked out. See *Journal*, Part IV, p. 678.

Table A, facing p. 358; *Victoria*, cols. 16 and 17, for — read ×

„ „ „ *Gold Coast*, col. 3, for — read *

„ „ „ *Mauritius*, „ „ * „ —

Page 371, Table I, *China*, years 1876-80, for — read included in various.

PART III.

Page 522, line 7, for Table 11, read Table 12.

NOTICE.

THE Council of the Royal Statistical Society wish it to be understood, that, while they consider it their duty to adopt every means within their power to test the facts inserted in this *Journal*, they do not hold themselves responsible for their accuracy, which must rest upon the authority of the several Contributors.

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JOURNAL OF THE ROYAL STATISTICAL SOCIETY,

MARCH, 1894.

The PERILS and PROTECTION of INFANT LIFE.

(HOWARD MEDAL PRIZE ESSAY.)

By HUGH R. JONES, M.A., M.D., D.P.H., CANTAB., B.SC., LOND.,
*Honorary Assistant Surgeon to the Infirmary for Children,
Lecturer on Bacteriology, Royal Southern Hospital, Liverpool.*

[Read before the Royal Statistical Society, 19th December, 1893.

The PRESIDENT, CHARLES BOOTH, ESQ., in the Chair.]

Dî quibus imperium est animarum, umbræque silentes
Et Chaos et Phlegethon, loca nocte silentia latè,
Sit mihi fas audita loqui; sit numine vestro
Pandere res altâ terrâ et caligine mersas

* * * *

Vestibulum ante ipsum primisque in faucibus Orci,
Luctus et ultrices posuere cubilia Curæ:
Pallentesque habitant Morbi, tristisque Senectus
Et Metus et malesuada Fames et turpis Egestas
Terribiles visu formæ: Lethumque: Laborque:
Tum consanguineus Lethi Sopor et mala mentis
Gaudia:

* * * *

Continuò auditæ voces, vagitus et ingens
Infantumque animæ flentes in limine primo:
Quos dulcis vitæ exsortes et ab ubere raptos
Abstulit atra dies, et funere mersit acerbo.

P. VIRGILII MARONIS *Æneidos*, Lib. vj.

Ye Gods who hold the sway of souls, ye silent Shades and Chaos and Phlegethon, darkling and wide and soundless realms, may it be mine without impiety to speak what I have heard and to expose what murk of gloom and the bulk of earth conceal.

Before the very portal and on the edge of the jaws of hell, have Grief and Revengeful Cares strown their couches. There dwell all Sallow Maladies and Sad Old Age and Fear and Famine that prompts to many a crime and Loathsome Need, shapes terrible to behold and Death and Toil and Death's Blood-brother Sleep and Evil Joys that haunt the soul.

Forthwith are heard voices, loud wailings and weeping ghosts of infants, in the first opening of the gate; whom bereaved of sweet life out of the course of nature and snatched from the breast a black day cut off and buried in an untimely grave.

VIRGIL: *Æneid*, Book vj.

SUMMARY OF PAPER.

Introduction and History.	Special Social Conditions— <i>contd.</i>
Definitions.	National Prosperity.
Infant Mortality, all England.	Poor Law Statistics.
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Special Social Conditions—	Intemperance.
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Influence of Dwelling House.	Conclusion.
	Appendix.

Note.—Unless otherwise stated, the statistics are drawn from the Annual and Decennial Reports of the Registrar-General.

Introductory.

THE better protection of Infant Life is one of the most intricate and difficult of modern problems. It is closely bound up with many of the most widely discussed questions of the day. The labour problem bears upon it, because the rise and fall of wages has a direct influence on the rise and fall of the infant death-rate. The drifting of the rural population to towns is due, in part at least, to our system of land tenure; and it is well known that the perils of infant life are greatest in towns. The land question therefore needs consideration in any study of infant mortality. The ignorance which is responsible for so much of the waste of child life exists in spite of national education, so that means must be devised to combat the evil arising from defective training. The most popular form of thrift among the working classes (or industrial classes) is child insurance, and to this form of thrift child neglect and child murder have been almost wholly attributed by many persons.

Much has already been done to improve the social condition of the people and their sanitary surroundings. A wholesome water supply and efficient drainage are now obligatory, and compulsory universal vaccination modifies the susceptibility of the whole population to small pox, and thus its hygienic condition is improved. The compulsory demolition of insanitary areas, and

the provision of healthy dwellings, affect more especially a particular section of the community. Not content however with caring for the common weal, State interference has extended to more domestic and personal matters, even to the relation which exists between parents and children.

It is worthy of notice too that legislation has been directed against cause and against effect—(not only have bad hygienic conditions been remedied, but measures have been adopted to prevent their recurrence), so that the remedy has been immediate in its application, and a repetition of the evil has been rendered improbable.

In some respects legislation in so far as it affects the protection of infant life, has been in a sense inconsistent. It has imposed upon the State certain burdens to the relief of the parents, while it has on the other hand insisted upon the performance of other duties by the parents or guardians. In certain instances it has tended to diminish parental responsibility, *e.g.*, by the practical adoption of the principle of free education; in other instances the tendency has been to increase it, *e.g.*, by provision for the safe and careful custody of children.

The great problem to be solved is, how to protect children without usurping unnecessarily the authority of parents, and without diminishing unduly their responsibility. In the subsequent consideration of the better protection of infant life, the importance of this summary will become obvious: because the majority of the perils of infant life exist in the home. The larger proportion of the preventable deaths of young children are not due to causes directly under municipal or State control, but are due to the habitual and general neglect of duty and responsibility by parents and guardians. It may be even taken for granted that with a more fully developed sense of parental responsibility, it would be unnecessary to legislate for the protection of infant life. Wilful neglect, cruelty, and infanticide would gradually cease. We cannot however be content to leave things alone; we cannot accept the present sacrifice of infant life as a necessary though temporary evil—the inevitable concomitant of changing social conditions, among which the rapid growth of towns, and the more general employment of women in industrial occupations during recent years may be instanced. The evil is more deeply seated; we cannot hope to remove it by merely improving the sanitary conditions of urban life, by improving general education and the moral training of the children. True, these are important factors, but it is a vain expectation to see either an immediate or an appreciable improvement in the conditions of child life, by waiting patiently for a high moral sense to be developed by the general

community. The general consensus of opinion tends to the adoption of more drastic and immediate efforts to protect child life. Just as in the case of intemperance, where the wakening conscience of the masses has been nourished and fostered by penal laws against intemperance, so in the protection of child life active measures must be adopted corresponding to the growth of public opinion. Such measures would have a directly educating tendency.

Nevertheless the tendency in modern politics to legislate rashly in cases where persistent agitation is practised by a comparatively small number of persons must be carefully watched. The question of child insurance, which has been so much debated, has been accorded an importance far beyond its merits; in reality it only touches the fringe of the greater subject, the protection of child life, instead of being synonymous with it, as is so loudly urged. In a commendable endeavour to protect child life, care must be taken to avoid needless interference with existing conditions, by which the present confusion will only be intensified and aggravated.

It is impossible to discuss at length in this paper the remote factors which tend to excessive infant mortality. Upon these factors depends the prosperity of the country; for, in general, it may be said that with a heavy purse is associated a light mortality. Suffice it to say, that the preventable perils of child life may be referred to two fundamental causes, poverty, and the want of individual responsibility; and even these two causes may be traced to one common origin. With national and individual prosperity, combined with national and individual responsibility, it would be unnecessary to protect child life. Individual prosperity would provide the means, and individual responsibility would secure the employment of those means to the best advantage for the care and education of children. At the same time, much may be done by treating the more immediate causes of excessive infant mortality. Just as in medicine it is possible to palliate symptoms and to reduce distress without eradicating disease—indeed, a cure is sometimes effected by such treatment—so in the protection of child life by counteracting influences which are injurious to it, and by remedying social conditions (the result of remoter causes) benefit will accrue. The effect of rightly treating symptoms, once their significance is thoroughly appreciated, is always advantageous, and it is the highest art so to treat symptoms as to cure disease.

It will be of advantage to consider in this place, as illustrating what has already been said, as briefly as possible, the history of English legislation for the better protection of children.

*Historical.*¹

In 1601 the first English poor law was passed, which provided for the support of children by their parents or grandparents, and in their default it established a system of child apprenticeship. In 1747 the cruel treatment to which these helpless children were subjected was partly remedied by an Act which empowered justices to discharge parish apprentices for ill usage. This Act was however evaded by some employers, and used as a means to rid themselves of their apprentices, and in 1792 an Act was passed by which the duty of prosecuting masters guilty of ill treatment was laid upon the parish officers. In the meantime (in 1788) it had been enacted that no boy should be employed as a chimney sweep under the age of 8 years: the hours of work were restricted, and the number of apprentices was limited. With the present century began the series of Factory Acts. The first, in 1802, provided for the cleanliness of factories, for the clothing and education of apprentices; it prohibited night work, and limited the hours of labour to twelve. The second, in 1819, regulated the employment of children in cotton mills and factories. The lowest age at which children could be employed was fixed at 9 years, and the hours of labour for children between the ages of 9 and 16 years were limited to twelve. More recently, child employment has been prohibited under the age of 11 years. In 1826 further restrictions were imposed upon the employment of children, and better provision for meal times was made. A short day of nine hours on Saturdays was introduced. In 1833 the distinction was first drawn between "children" of the ages 9 to 13 years, and "young persons" of the ages of 13 to 18 years. Children were not to work more than nine hours a day, and were compelled to spend two hours in school. Inspectors of factories were also appointed.

In 1834 the age of apprenticeship to chimney sweeping was raised from 8 to 10 years. The age was further raised to 16 in 1840.

Regulation of other industries and occupations was also adopted; for example, in 1842 children were prohibited from working underground, and more lately (in 1877) canal boat children were protected. In 1844 the hours of work for children were reduced to six and a half; and three hours' daily attendance at school required.

The better protection of apprentices and servants was secured in 1851 by an Act which enabled the guardians to prosecute in certain

¹ Liverpool Society for the Prevention of Cruelty to Children. Second Report, 1885. "Historical Résumé of English Legislation." By W. J. Stewart, B.A., Stipendiary Magistrate.

cases. Necessary food, clothing and lodging were to be provided. These provisions were extended to the cases of parent and child in 1868; and neglect to provide medical aid was made punishable in 1875.

Reformatory and industrial schools were established in 1866, and provision was made to receive therein not only destitute and orphan children, but also children having a surviving parent in prison, and children found in the company of thieves. In 1870 the Education Act was passed.

In 1872 the Infant Life Protection Act became law, to prevent the evils attendant on baby farming. In 1875 child insurance, which had been prohibited by an Act of George III, unless an insurable interest in the life existed, was permitted with certain restrictions, and the numerous burial clubs were thus suppressed. In 1889, the Prevention of Cruelty to Children Act was passed.

This brief and incomplete review of the legislation for the better protection of children is instructive, as it is indicative of the growing tendency of the State to stand *in loco parentis*.

Definitions, &c.

The word infant is technically restricted by some writers to children under 1 year of age. By others it is used to include all children in the preparatory department of elementary schools, and therefore it is applied to children under the age of 7. Legally it includes all minors. It will be used in its most restricted sense—children under the age of 1 year—throughout this paper, but as the perils of child life under the age of 5 years are almost always identical with those of infant life, I have thought it well to include statistics having reference to the higher age limit. In general it may be said that the only reliable measure of the perils of infant life are the mortality statistics of the Registrar-General. These statistics will serve as a framework around which we can group and consider in orderly fashion not only the fatal, but the non-fatal perils of infant life. These statistics, for purposes of comparison, are expressed as rates per 1,000 living (Death-Rates), and in the case of infants also as rates per 1,000 births (Rates of Infant Mortality). I shall show that the preventable perils of child life are greatest in early infancy, when the child possesses least power of resistance, when it is unable easily to adapt itself to its environment, when it is exposed to more numerous dangers owing to its helplessness. Mortality statistics, though most valuable, need to be supplemented by statistics of case mortality before they can be used as an exact measure of the perils of infant life. As a general rule, however, it may be said that case mortality is highest at the extremes of life, and a large death-rate

from any disease may therefore be interpreted to mean not only that many children die from that disease, but also that the number of deaths is greater than would have been the case if the disease had occurred at later age periods. We have no means of estimating the frequency of non-fatal perils with any degree of accuracy.

Infant Mortality.

The rate of infant mortality for all England, *i.e.*, the number of deaths under 1 year of age per 1,000 births, is shown in the following table :—

TABLE I.—*Rates of Infant Mortality. All England.*

Years.		Years.	
1838-40	155	1861-70	154
'41-50	153	'71-80	149
'51-60	154	'81-90	142

During the decade 1881-90 the rate of infant mortality varied from 130 in 1881 to 151 in 1890. The death-rates at each year of life (0—5 years) during the year 1889 were as under :—

TABLE II.—*Death-Rates at each Year 0—5 Years.*

Age.	Death-Rates.		
	1889.	1861-70.	1871-80.
0—1 year	177·0		
1—2 years	65·9		
2—3 „	27·7		
3—4 „	18·0		
4—5 „	12·5		
0—5 „	51·3	68·2	63·12
All ages....	17·9	22·5	21·27

The death-rate at all ages, 1861-70, was 22·5, and 1871-80, 21·27. The death-rate (0—5 years) was, during the same decades 1861-70, 68·2, and 1871-80, 63·12. The general death-rate therefore fell 5·4 per cent., and the death-rate (0—5 years) fell 7·4 per cent. The mortality (0—5 years) during the decade 1871-80 varied from 30 in the West Ward district, Westmoreland, to 119 in Liverpool district, and the rate of infant mortality during the same period varied from 80 in Westhampnett, to 217 in Liverpool. The excess of the prevailing rate of mortality in any district over the minimum rate recorded may be used as a measure of the preventable fatal perils of infant life, even though the minimum rate is higher than the ideal rate would be in a perfect state of society.

If we analyse the causes of death, we find that the share taken by the eight chief groups into which the deaths from all causes

are classified by the Registrar-General in the sum of the total mortality, varies very widely, and the statistics for the year 1889 have been analysed to show how the rate of infant mortality is made up, and what are the chief causes of death operating under the age of 5 years. The comparative influence of diseases on the general rate of mortality may be measured in two ways: (1) By calculating the mortality from each disease or group of diseases per 1,000 living, or in the case of infants per 1,000 births. By this method the actual share which each disease has in the total mortality from all causes is ascertained. (2) By calculating the ratio of deaths at different age periods to the total deaths at all ages from different diseases. This method shows the incidence of fatality from each disease at the different age periods, and we can therefore classify diseases as diseases of infancy, of childhood, of adolescence, of maturity, or of old age.

TABLE III.—*Analysis of Causes of Death, 1889.*

Causes of Death.	Rate of Infant Mortality.		Ratio of Deaths to Deaths at All Ages.			
	Males.	Females.	0—1 Year.		0—5 Years.	
			Males.	Females.	Males.	Females.
All causes	159·0	129·0	26·7	22·2	41·3	36·7
1. Specific febrile diseases	28·1	25·0	36·8	34·0	76·8	71·7
2. Parasitic diseases	0·6	0·56	80·2	71·9	89·7	86·9
3. Dietetic „	0·3	0·27	84·2	83·3	85·9	89·5
4. Developmental diseases	21·4	17·4	99·0	98·7	99·6	99·6
5. Constitutional „	10·4	8·4	10·4	7·9	20·6	16·6
6. Local diseases	69·2	54·2	22·7	18·1	35·5	30·5
7. Violence	2·4	2·5	8·7	22·0	17·8	37·8
8. Other causes	24·7	20·4	80·8	75·9	88·1	85·0

Before proceeding to consider the deaths from each of these groups of diseases separately, it will simplify the subsequent discussion if we refer in this place to certain differences in the rates of infant mortality. It has already been pointed out that the rate of infant mortality varies very widely. It is lowest in purely agricultural districts and counties; it is highest in mining counties, and those with textile industries: *e.g.*, it is 83 in Dorset, and 176 in Lancashire. In his investigation as to the causes of death in infancy, the Registrar-General (Report, 1891) prepared tables which give the alleged causes of death and precise age of those who die. He also constructed life tables for infants born in three rural counties and three selected towns. From these it appears that the mortality is highest on the first day of life, remaining very high, however, for the first week. The

mortality is at its maximum in the first week, and in the first month, and in the first year of life. It falls abruptly in the second month, and declines gradually to the end of the seventh month; after which no very noticeable change takes place in the rate of mortality of infants. The aggregate infant mortality was twice as high in the towns as in the counties, and the town rate is higher for each fraction of the year than the rural rate. The town rates are most in excess of the rural rates in the later months of infancy, and it is of interest to note that four-fifths of the deaths during the first month of life are returned as due to premature birth, to congenital malformation, and to the somewhat indefinite causes of atelectasis, atrophy, and convulsions. Icterus and erysipelas neonatorum are also most destructive at this period. The consequence of the great incidence of these diseases in very early infancy is to tend to equalise the rates of mortality for town and country. The perils of infant life have scarcely begun to operate. These perils predominate in towns. Diarrhoeal diseases are most destructive from the third to the sixth month. Congenital syphilis is most fatal during the first four months. Deaths from dentition are most numerous during the last three months. Whooping cough is the first zymotic to appear, closely followed by measles, and finally by scarlet fever. The excess in mortality in towns is due to diarrhoea and enteritis, to measles and scarlet fever (these diseases are favoured by a close aggregation of population), to syphilis, to premature birth (associated as it would seem with the employment of young married women in industrial occupations). The mortality from congenital malformations is much the same in the counties as in the towns.

The male and female mortality at different age periods is given in the following table. The male mortality is always slightly higher than the female mortality. The mortality is highest in the first year of life, is very considerable in the second year, after which it drops, until the minimum is reached at the 10—15 year age period.

TABLE IV.—*Mortality at Ages 0—75 per 1,000 Living, 1871-80.*

Age.	Males.	Females.	Age.	Males.	Females.
0—1	197·4	157·3	20—25	7·3	6·8
1—2	68·3	63·6	25—35	9·3	8·6
2—3	27·9	27·5	35—45	13·7	11·6
3—4	18·1	17·9	45—55	20·1	15·6
4—5	13·3	12·9	55—65	34·8	28·5
5—10	6·7	6·2	65—75	69·6	60·1
10—15	3·7	3·7	Over 65.....	169·1	158·8
15—20	5·2	5·4			

The mortality during the first year of life is further analysed in the following table:—

TABLE V.—*Mortality during Infancy.*

[Registrar-General's Report, 1890.]

Age.	Males.	Females.	Ratio of Male to Female Mortality.
0— 3 months.....	333	261	1'276
3— 6 ".....	147	122	1'205
6—12 ".....	120	100	1'200
0—12 ".....	204	164	1'244

The table expresses rates per 1,000 living at each age, and is calculated for the year 1890. The mortality for each month is during the first year of life as under:—

TABLE VI.—*Annual Death-Rate per 1,000 at each Month of Age.*

[Registrar-General's Report, 1875.]

Age in Months.	Healthy Districts.	English Life Table.	Liverpool District.
0.....	447'51	571'32	672'19
1.....	145'49	218'37	316'72
2.....	102'05	157'10	226'78
3.....	87'16	131'87	209'37
4.....	81'09	126'04	205'25
5.....	75'54	120'50	203'65
6.....	70'54	115'09	204'89
7.....	65'97	109'92	209'17
8.....	61'85	105'01	216'42
9.....	58'32	100'33	227'30
10.....	55'28	95'84	241'80
11.....	52'86	91'61	260'23

It is to be noted that while in country districts the death-rate diminishes month by month, in large towns like Liverpool a very material rise takes place in the later months of infancy. During earlier infancy, when the great majority of infants are breast-fed, and receive most constant attention, their chance of life is more nearly equal in town and country than during the later months of infant life, when the preventable causes of infant mortality are more numerous and powerful.

Proceeding now to the consideration of the deaths in early childhood from the different groups of disease, I shall defer for later discussion certain of the social factors which predispose to certain forms of death. I shall afterwards consider certain special perils of infant life, *e.g.*, those due to baby-farming, to child insurance, and to the administration of opiates.

Considering, in the first place the mortality from ZYMOTIC

DISEASES, it is seen that it is responsible for nearly 20 per cent. of the infant mortality, and that about 35 per cent. of all deaths from zymotic diseases occur under the age of 1 year, and no fewer than 76 per cent. under the age of 5 years. Zymotic diseases are therefore peculiarly a danger of infant life. The death-rate from zymotic diseases at each year of life 0—5 years is shown by the following table, compiled from the Registrar-General's Decennial Report, 1871-80:—

TABLE VII.—*Deaths per 1,000 Living from Zymotic Diseases, 1889.*

Age.	Total Deaths.	Persons.	Rate per 1,000.
0—1.....	236,674	720,002	32·87
1—2.....	144,645	639,202	22·62
2—3.....	79,299	659,285	12·03
3—4.....	57,847	644,006	8·98
4—5.....	42,715	633,575	6·74
0—5.....	561,180	3,296,270	17·03

It will be noticed that the fatality of zymotic diseases diminishes year by year. For this diminution two reasons are assignable: (1) The diminished case mortality at later age periods. This is shown by the statistics of hospitals, where the mortality is found to be greatest at the extremes of life. I quote the hospital statistics for scarlet fever (Registrar-General's Report, 1886):—

TABLE VIII.—*Case Mortality per 1,000 from Scarlet Fever, 1874-85.*

Age.	Male.	Female.
0—1	395	442
1—2	384	346
2—3	255	226
3—4	184	174
4—5	130	112
0—5	241	217

The importance therefore of protecting infants from birth to as large an extent as possible from the risk of zymotic diseases is obvious. Into the ultimate result of postponing the date of attack of zymotic diseases upon the health of the general population it is not necessary to enter further than to point out that the tendency would be to stamp out disease, and thus a direct and general benefit would accrue from the protection of infant life. The mortality from small pox is a case in point. Though the

mortality at higher age periods has slightly increased, there can be no doubt but that the resultant effect on the general community has been beneficial.

(2) The immunity conferred by one attack from subsequent attacks renders the population at the later age periods less liable to attack from zymotic diseases. There can be no doubt but that the mortality from zymotic diseases is greater than the recorded mortality, as many organic diseases of the heart, of lungs, and of kidneys, date from an attack of zymotic disease, and from these diseases death ultimately results. Therefore although there would be greater risk to the adult population if an epidemic occurred in a virgin community, a direct saving of life would be accomplished. Isolation and preventive measures could be more efficiently carried out. The disease would be more easily localised.

Certain zymotics moreover are peculiar to earlier childhood, *e.g.*, fatal diarrhoea, measles, and whooping cough. These diseases would tend to disappear.

The different zymotic diseases require individual consideration.

1. SMALL POX.—The death-rate 0—5 years 1871-80 was 0·53. The death-rate at the different age periods 1854-87:—

TABLE IX.—*Mortality from Small Pox at Age Periods.*

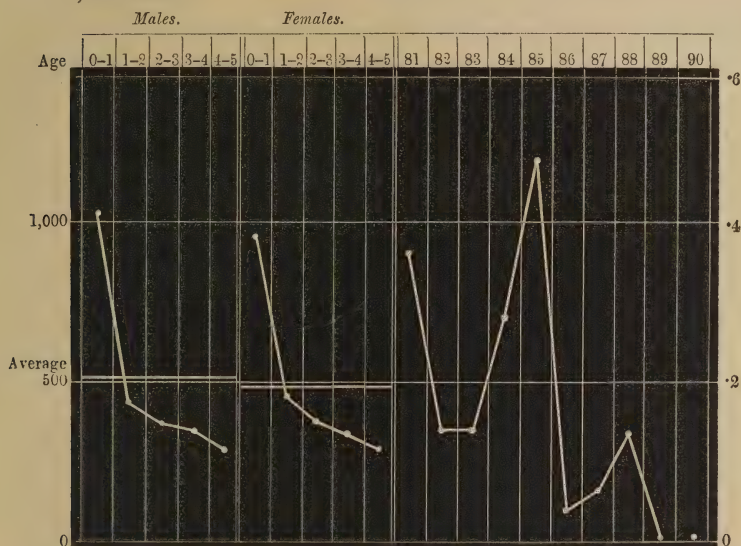
Age.			Age.	Male.	Female.
0—3 months	1·57		1—2 years.....	0·432	0·448
3—6 „	0·89		2—3 „	0·367	0·381
6—12 „	0·79		3—4 „	0·341	0·333
			4—5 „	0·305	0·296
0—1 year	M. 1·035	F. 0·946	0—5 years.....	0·511	0·493

The deaths between 1881-90 (0—1 year) numbered 1,389, of which 40 occurred in vaccinated children, 583 in unvaccinated children, and in 766 the condition as to vaccination was not stated. The death-rate per 1,000 births varied from 0·00225 in 1889 to 0·481 in 1885:—

TABLE X.—*Rate of Infant Mortality from Small Pox, 1881-90.*

Year.		Year.	
1881	0·361	1886	0·0335
'82	0·145	'87	0·0688
'83	0·142	'88	0·138
'84	0·280	'89	0·00225
'85	0·481	'90	0·00344

Annual deaths from small pox at age periods (0—5 years), 1854-87, per 1,000,000 living, and at age 0—1 year, for the decade 1881-90, per 1,000 births.



It is unnecessary to discuss the prophylactic value of vaccination—it is only needful to mention that since 1851 there has been a continuous decline in infant mortality from small pox, that the decline has been simultaneous with the more efficient performance of obligatory vaccination; and that the decline in mortality does not correspond to the decline in the general death-rate, which has been attributed to better sanitation.

Small pox is most fatal in infants; the mortality abruptly falls during the second year of life, and continues to fall every year during the age period 0—5 years. The value of shielding infants from small pox is therefore patent. The case mortality of small pox 0—2 years, compared with the case mortality of all ages, is as follows:—

TABLE XI.

Vaccination Marks.	0—2 Years.	All Ages.
Good marks	—	3
Imperfect marks	9	9
No marks	41	27
Unvaccinated	66	43

The figures are also confirmatory evidence of the prophylactic value of vaccination. As a non-fatal peril of infant life may be mentioned the blindness which is due to small pox.

2. MEASLES.—The death-rates per 1,000 living (1848-87) is given in the following table:—

TABLE XII.—*Death-Rates for Measles at Age Periods.*

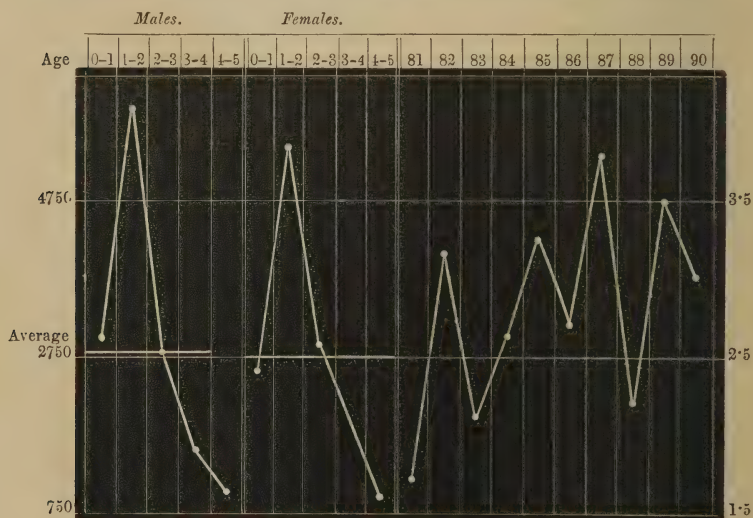
Age.			Age.	Male.	Female.
0—3 months	0·38		1—2 years.....	5·812	5·462
3—6 „	0·84		2—3 „	2·883	2·935
6—12 „	4·88		3—4 „	1·599	1·680
			4—5 „	0·926	0·956
0—1 year	M. 3·011	F. 2·515	0—5 years.....	2·888	2·733

The rate of infant mortality from measles during the decade was as under:—

TABLE XIII.—*Rate of Infant Mortality, Measles, 1881-90.*

1881	1·719	1886	2·763
'82	3·208	'87	3·820
'83	2·182	'88	2·232
'84	2·697	'89	3·531
'85	3·344	'90	3·030

Annual deaths from measles at age periods (0—5 years), 1848-87, per 1,000,000 living, and at age 0—1 year, for the decade 1881-90, per 1,000 births.



It is to be noticed that measles is most fatal during the second year of life. It is also becoming more prevalent. The infant mortality, 1851-60, was 2·095, 1861-70, 2·291, 1871-80, 2·319, 1881-90,

2·85. More importance and attention must be given to measles. Measles and whooping cough are regarded as so truly and entirely infantile disorders, that there is a tendency to neglect them. They are both infectious before they can be diagnosed with certainty, so that compulsory notification is only a partial means of suppression. It is however urgently needed, owing to the great influence of schools in spreading the disease. The danger of measles has been very greatly underrated. There is no doubt but that the tuberculous diseases of childhood, whether local, as lupus and enlarged glands, or whether general and fatal, as pulmonary phthisis, are often rightly traced and attributed to an attack of measles. Prolonged debility and ill health are frequent sequelæ. Moreover many deaths, really due to measles, are ascribed to disease of the respiratory organs, which is so general a complication. The *insouciance* with which measles is regarded is wholly unjustifiable.

3. SCARLET FEVER.—The death-rates at age periods per 1,000 living, 1859-85, are given in the following table:—

TABLE XIV.—*Death-Rates from Scarlet Fever at Age Periods.*

Age.			Age.	Male.	Female.
0—3 months	0·30		1—2 years.....	4·170	3·874
3—6 „	0·69		2—3 „	4·676	4·491
6—12 „	2·35		3—4 „	4·484	4·332
			4—5 „	3·642	3·556
0—1 year	M. 1·664	F. 1·384	0—5 years.....	3·681	3·482

The rate of infant mortality from scarlet fever during the decade was as under:—

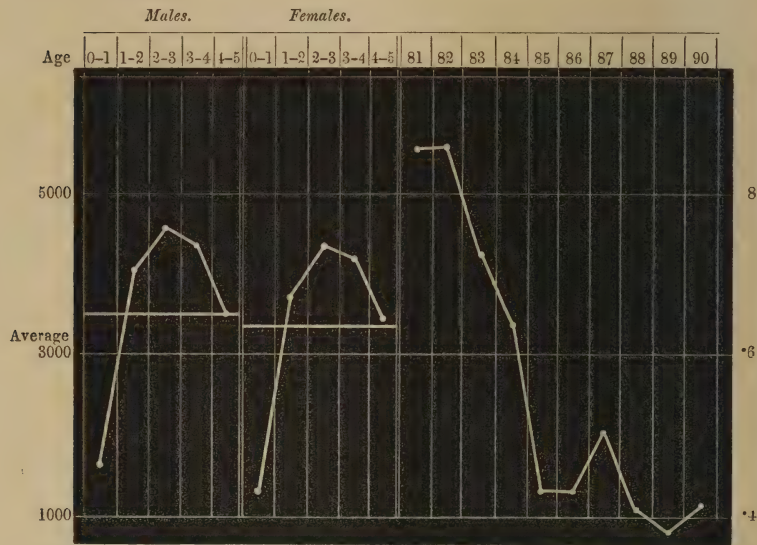
TABLE XV.—*Rate of Infant Mortality from Scarlet Fever, 1881-90.*

1881	0·8606	1886	0·4336
'82	0·8706	'87	0·5007
'83	0·7331	'88	0·4114
'84	0·6460	'89	0·3860
'85	0·4372	'90	0·4103

There has been a continuous decline during recent years in the infant mortality from scarlet fever. During 1851-60 the mortality was 1·685; from 1861-70, 1·698; from 1871-80, 1·185; and from 1881-90, 0·5692. It is most fatal during the third year of life. Numerous sequelæ are observed after scarlet fever, so that this disease also is more fatal than the statistics show. The prompt isolation of cases, and the more general hospital treatment of

patients, is being followed by excellent results, and is ample justification for the notification of infectious diseases.

Annual deaths from scarlet fever at age periods (0—5 years), 1859-85, per 1,000,000 living, and at age 0—1 year, for the decade 1881-90, per 1,000 births.



4. WHOOPING COUGH.—The mortality at age periods is shown in the following table:—

TABLE XVI.—*Death-Rates from Whooping Cough at Age Periods, 1848-87.*

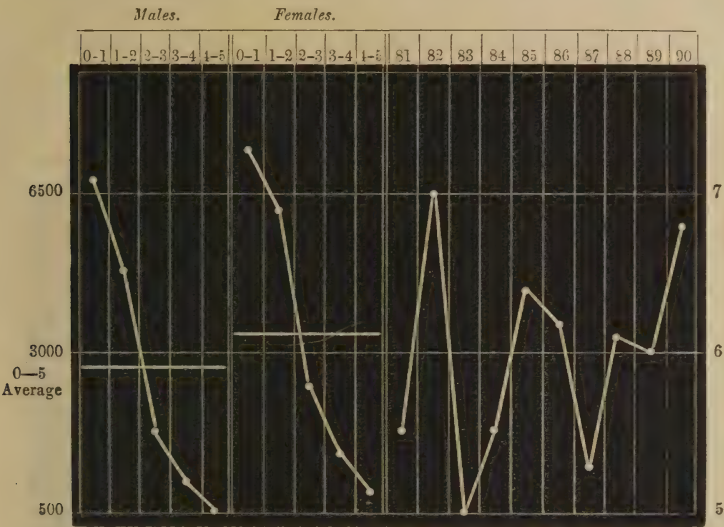
Age.		Age.	Male.	Female
0— 3 months	4.56	1—2 years.....	4.930	6.213
3— 6 „	6.14	2—3 „	2.071	2.954
6—12 „	8.12	3—4 „	1.086	1.629
		4—5 „	0.584	0.859
0— 1 year	M. 6.769 F. 7.306	0—5 years.....	3.217	3.916

The rate of infant mortality during the decade was as under:—

TABLE XVII.—*Rates of Infant Mortality, Whooping Cough, 1881-90.*

1881	5.521	1886	6.289
'82	7.096	'87	5.357
'83	5.071	'88	6.147
'84	5.523	'89	6.012
'85	6.445	'90	6.874

Annual deaths from whooping cough at ages 0—5 years, 1848-87, per 1,000,000 living, and at age 0—1 year, for the decade 1881-90, per 1,000 births.



It is seen that whooping cough is most fatal during the first year of life; a curious circumstance is that it is uniformly more fatal in girls than in boys at each year of age. It is the most fatal of all zymotic diseases except diarrhoea. It is one of the most difficult diseases to treat and isolate; its duration is long, and it is infectious before it can be recognised. Between 1851-60 the rate of infant mortality from whooping cough was 5.744; from 1861-70, 6.083; from 1871-80, 6.198; and from 1881-90, 6.007, so that its frequency is remaining fairly constant. Little has as yet been done to grapple seriously with the disease.

5. DIPHTHERIA.—The mortality at age periods per 1,000 living, 1859-87, and the rates of infant mortality from diphtheria during each year of the decade 1881-90, are given in the following tables:—

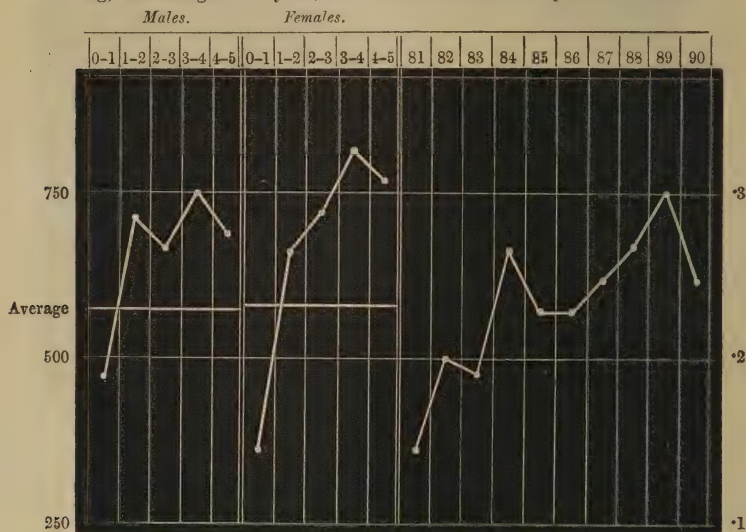
TABLE XVIII.—*Death-Rates from Diphtheria at Age Periods.*

Age.		Age.		
			Males.	Females.
0— 3 months	0.32	1—2 years.....	0.720	0.665
3— 6 "	0.30	2—3 "	0.675	0.731
6—12 "	0.63	3—4 "	0.757	0.835
		4—5 "	0.690	0.782
0— 1 year	M. 0.464 F. 0.356	0—5 years.....	0.655	0.664

TABLE XIX.—*Rates of Infant Mortality, Diphtheria, 1881-90.*

1881	0·144	1886	0·230
'82	0·209	'87	0·253
'83	0·195	'88	0·278
'84	0·275	'89	0·309
'85	0·233	'90	0·257

Annual deaths from diphtheria at ages 0—5 years, 1859-87, per 1,000,000 living, and at age 0—1 year, for the decade 1881-90, per 1,000 births.

TABLE XX.—*Death-Rates from Croup at Age Periods, 1869-87.*

Age.	Males.	Females.	Age.	Males.	Females.
0—1 year	1·043	0·752	3—4 years.....	1·422	1·294
1—2 years.....	1·871	1·574	4—5 „	1·013	0·912
2—3 „	1·633	1·519	0—5 years.....	—	—

Many cases of death returned as due to “croup” ought to be included with the diphtheria statistics. It is noticeable that the frequency of croup, as shown by its mortality at the different age periods, is greatest in the second year, while diphtheria is most fatal in the fourth year. The difference is naturally to be expected, for the younger the child the greater the possibility that diphtheria will not be recognised.

Diphtheria seems to be gradually increasing in frequency in infants during the last decade. The influence of school attendance in the propagation of infectious diseases, though recognised, is not fully appreciated. In diphtheria the influence is very great, and summary measures ought to be taken with regard to diphtheria and measles earlier than is usually the case. The closure of elementary schools during an outbreak of infectious disease has

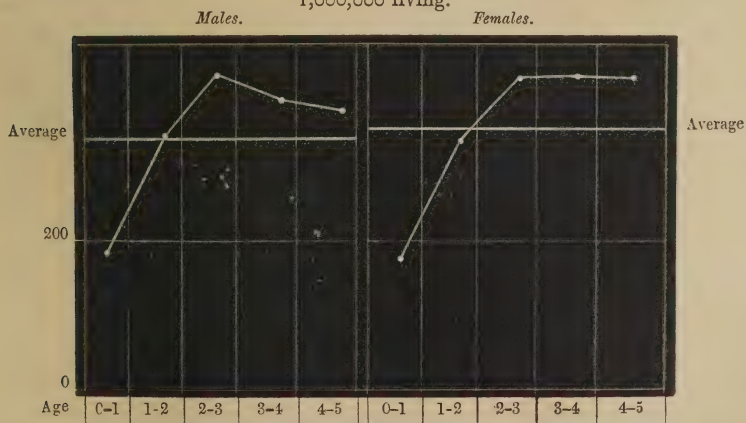
been provided for in the educational code, but the practice has been to delay acting until the epidemic is well established, and the tendency is to re-open the school prematurely. The delay in closing is defended on the ground that closure interferes with the school curriculum and endangers the grant; but the occurrence of even a few cases of diphtheria or measles ought to determine immediate action. Sunday schools are more difficult to manage. During a severe epidemic² of diphtheria at Lake Vyrnwy, Montgomeryshire, in 1888 (when plenary powers were entrusted to me for dealing with the epidemic) I failed utterly to convince the Sunday schools authorities of the urgent necessity for closing the schools, and the outbreak was only suppressed by the compulsory removal of all cases to an infectious hospital. Additional powers are needed to deal with public meetings in such cases.

6. ENTERIC FEVER.—Cases of enteric fever rarely occur, and are still more rarely diagnosed in early life. Depending upon contamination of the food supply and upon the risk of exposure to the specific virus which is increased by change of residence and travelling, the danger of enteric fever is less in the case of infants than in persons of older years. The death-rates per 1,000 living at age periods (1869-87) are given in the following table:—

TABLE XXI.—*Death-Rates from Enteric Fever at Age Periods.*

Age.	Males.	Females.	Age.	Males.	Females.
0—1 year	0·181	0·171	3—4 years.....	0·343	0·374
1—2 years.....	0·306	0·299	4—5 „	0·336	0·373
2—3 „	0·364	0·365	0—5 years.....	0·303	0·312

Annual deaths from enteric fever at age periods (0—5 years), 1869-87, per 1,000,000 living.



² Lake Vyrnwy: the History of a Valley and Submerged Village. Liverpool, 1892. D. Marples & Co.

7. DIARRHŒA.—Deaths from diarrhœa are allied in many respects to deaths from enteric fever. Diarrhœa and enteric fever belong to a class of specific fevers other than those previously considered. Diarrhœa has long been studied by specialists in public health, and the general opinion now held is that fatal infantile diarrhœa is a specific disease, due to a specific virus which is introduced into the system through the food supply. The frequency and consequently the fatality of diarrhœa is affected by a very large number of factors. It has a direct relation to meteorological conditions; the number of cases varying with the temperature registered by the four-foot earth thermometer. Rain-fall, wind and season all have influence. Locality and the geological nature of the soil are also factors. Lastly, density of buildings, elevation of site, want of ventilation and want of cleanliness, foul air and foul water, social position—that is to say social conditions—are all important. In short, for the prevalence of diarrhœa, the locality must be a favourable nidus for the specific organism; the meteorological conditions must be favourable for its activity; the social conditions must be favourable for its distribution. The majority (but not all) of the fatal cases of diarrhœa are directly traceable to the contamination of the food supply. Diarrhœa is however sometimes symptomatic. We are now concerning ourselves with fatal infantile diarrhœa. More than 78 per cent. of all deaths from diarrhœa are deaths of infants. The mortality at age periods 1848-87 is shown in the following table:—

TABLE XXII.—*Death-Rates from Diarrhœa at Age Periods.*

Age.			Age.	Males.	Females.
0— 3 months	21'00		1—2 years	5'024	4'956
3— 6 "	20'14		2—3 "	1'042	1'057
6—12 "	11'86		3—4 "	0'393	0'381
			4—5 "	0'231	0'221
0— 1 year	M. 18'97	F. 15'9	0—5 years.....	5'526	4'805

It is seen that diarrhœa is exceedingly fatal during the first year of life—more especially during the earlier months. This fatality in great measure is due to the improper feeding of infants. Owing to the neglect and ignorance of their mothers, the infants are fed on contaminated milk or other food. An attack of acute diarrhœa is developed, and the child very generally dies—if the attack is fatal—in less than seven days. Dr. Hope, the Assistant Medical Officer of Health for Liverpool, investigated 1,000 fatal

cases of diarrhœa³ occurring in children under 5 years of age in Liverpool, and I summarise his results. He found that the prevalence of fatal diarrhœa was associated with the existence of insanitary surroundings, squalor and filth; that the disease attacks all classes of society; that the mortality from the disease undergoes great yearly fluctuations and enormous seasonal fluctuations. The majority of the cases were acute, the illness lasting less than a week. It frequently happened that some other persons in the house, most commonly the children, were also affected to a greater or less degree with vomiting and diarrhœa. A certain number of cases were less acute, and temporary improvement would take place before the fatal issue. In all these cases death was frequently preceded by convulsions. In the more chronic cases the diarrhœa was, most frequently, merely a symptom of some other disease. Dr. Hope investigated the mode in which these children were fed. By "food" is meant a variety of things commonly considered appropriate for infants.

TABLE XXIII.—*Analysis of 1,000 Fatal Cases of Diarrhœa.*

Age at Death.	Under 3 Months.	Over 3 Months, Under 6 Months.	Over 6 Months, Under 12 Months.	Year, 1—2.	Years, 2—5.	Total.
Breast alone	16	7	7	—	—	30
„ and food	70	50	55	34	—	209
„ bottle, and food	40	35	30	4	—	109
Bottle alone	33	19	13	—	—	65
„ and "food"	69	115	115	16	—	315
Cow's milk and "food"	5	3	5	—	—	13
Breast and any kind of food.	—	1	16	20	—	37
Any kind of food.....	—	—	14	156	52	222
Total.....	233	230	255	230	52	1,000

It is seen that of 718 cases of infants, 30 only were fed on the breast alone, 391 got no breast milk at all, and 297 were getting artificial diet as well as breast milk. Dr. Hope further found that 50 per cent. of infants are fed upon breast milk alone up to 3 months of age. From 3 to 6 months about 20 per cent. are so fed, and from 6 to 12 months artificial food is nearly always given in addition to the breast milk. He was able to state his conclusions in the following way: Under 3 months of age for every infant fed entirely on the breast dying of diarrhœa, 15 die who receive other food in addition to or instead of breast milk. And if it be assumed that 15 per cent. of infants under 3 months of age are reared exclusively by artificial food (this

³ Liverpool Medicochirurgical Journal.

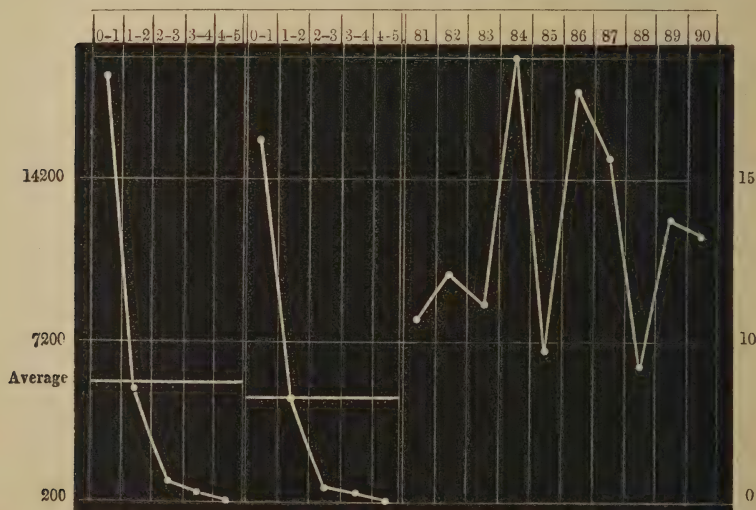
estimate is too low), the deaths amongst infants so fed are twenty-two times as numerous as they are amongst equal numbers of partly, or entirely, breast fed infants. From the age of 3 months to 6 months, if 80 per cent. of infants are supposed to get some breast milk, for every infant so fed dying of diarrhœa, six die amongst an equal number getting no breast milk at all. I have quoted Dr. Hope's paper so fully, in order to show the importance of infant feeding in the ætiology of infantile diarrhœa.

The rate of infant mortality from diarrhœa during the decade was as under:—

TABLE XXIV.—*Rates of Infant Mortality, Diarrhœa, 1881-90.*

1881	10·65	1886	18·27
'82	12·01	'87	15·90
'83	11·18	'88	9·33
'84	19·57	'89	13·85
'85	9·86	'90	13·42

Annual deaths from diarrhœa at ages 0—5 years, 1848-87, per 1,000,000 living, and at age 0—1 year, for the decade 1881-90, per 1,000 births.



But these rates of mortality do not fully represent all the deaths attributable to diarrhœa. Many cases result in chronic wasting and atrophy, and the children are returned as dying from debility, atrophy, or inanition. In America it has been noticed that deaths from these causes are more numerous after an epidemic of diarrhœa, and that they are more numerous during the later months of the year, following the seasonal prevalence of diarrhœa.

It is of interest to notice the great difference in the rate of infant mortality from diarrhœa in England and in Scotland.

Between 1873 and 1875 (Farr's "Vital Statistics," p. 191) the death-rate in England from diarrhœa was 17·1; from convulsions, 25·1; from atrophy, 26·7; from premature birth, 12·8 (the two last causes together having a rate of 39·5). In Scotland, during the same period, the death-rate from diarrhœa was 7·1; from convulsions, 5·5; from atrophy and premature birth, 30·7. I have already noticed that convulsions often terminate an attack of diarrhœa; and I shall hereafter show the relation between deaths from the other causes noted and the mismanagement of children. The deaths from diarrhœa depend upon social conditions which influence the feeding of children. In Scotland these conditions do not operate to nearly the same extent as they do in England. The sanitary conditions of Scotland are not so perfect as to account for the difference—the explanation depends upon better care for the children at home which exists in Scotland.

I have insisted on the importance of improper food, especially artificial food, in the ætiology of diarrhœa to the exclusion of other factors (which are fully considered in Dr. Ballard's report), because, as we shall hereafter see, the danger of artificial feeding to the child depends upon the two most potent factors tending to excessive infant mortality, viz., ignorance and neglect. In fact, the death-rate of infants from diarrhœa may be used as a measure of the ignorance of a community, together with the prevalence therein of child neglect.

The remaining other zymotic diseases do not require consideration, as the deaths are comparatively few. It is of interest, however, to notice that the death-rate from erysipelas (0—3 months) is 1·91; (0—6 months) 0·77; and (6—12 months) 0·27.

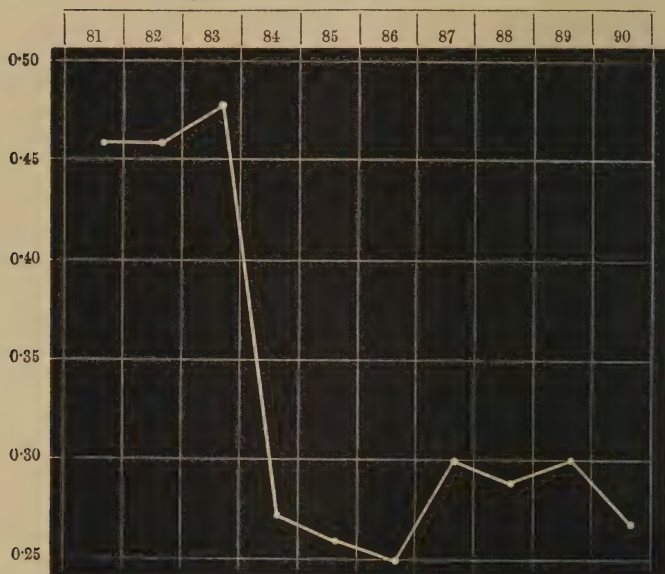
II.—DIETETIC DISEASES.

Excluding alcoholism, 84·2 per cent. of all the deaths of males (and 85·9 per cent. in the case of females) registered from dietetic diseases in 1889, are deaths of infants, of which 53 per cent. were deaths of infants under 3 months of age. Of the 2,983 deaths in infancy registered, 1881-90, from this cause, 2,968 were due to starvation and want of breast milk. Considering these alone, the rate of infant mortality during the decade was as under:—

TABLE XXV.—*Rates of Infant Mortality, Starvation, &c., 1881-90.*

1881	0·460	1886	0·250
'82	0·458	'87	0·301
'83	0·478	'88	0·296
'84	0·274	'89	0·303
'85	0·255	'90	0·267

England : Deaths from dietetic diseases.



It is seen that the deaths from dietetic diseases show a tendency to diminish in numbers. Here again the question of infant feeding is raised, and it can be asserted with confidence that deaths from this cause are either more properly referable to other causes, or are preventable.

III.—PARASITIC DISEASES.

The deaths of infants from parasitic diseases, 1881-90, numbered 6,889, and in 1889 the deaths of male infants were 80.2 per cent., and of female infants 71.9 per cent. of the total deaths from these diseases. The vast majority occur during the first three months of life—78 per cent. in the case of males. Most of the deaths are registered from thrush, but the growth of *oidium albicans* is only symptomatic of some other disorder—generally gastric in origin again : suggesting the same initial cause of illness, namely, bad feeding. Deaths from this cause ought to disappear in time from the mortality statistics, and will be assigned to the proximate causes of death. The rate of infant mortality from these diseases was as under:—

TABLE XXVI.—*Rate of Infant Mortality, Parasitic Diseases, 1881-90.*

1881	0.894	1886	0.870
'82	0.779	'87	0.712
'83	0.940	'88	0.593
'84	0.912	'89	0.611
'85	0.751	'90	0.734

Many of the deaths registered from these diseases may also be fairly regarded as preventable.

IV.—DEVELOPMENTAL DISEASES.

I shall defer the consideration of deaths from developmental diseases until I enter upon the discussion of certain social conditions tending to the undue destruction of infant life.

V.—CONSTITUTIONAL DISEASES.

About 10 per cent. of the deaths from constitutional diseases occur in infancy, and 20 per cent. in childhood under the age of 5 years.

Constitutional diseases in the Registrar-General's reports include rheumatism (which is comparatively rare, and rarely fatal in early life), rickets, and the group of tubercular diseases. The other diseases may be left out of our consideration.

Rickets.—Rickets is a very interesting disease considered historically. It was known as *morbus puerilis anglorum*, and in Dr. Whistler's inaugural thesis, which is dated 1645, he inquires, "whether it be best for the health of children to be "suckled by their own mothers?" So even then it was recognised that a connection existed between the occurrence of rickets and errors in diet. It is now most generally accepted that rickets is a disease almost entirely due to bad feeding. Whether syphilis or other hereditary taint is also a factor we need not now pause to consider. Rickets may be taken as a typical peril of infant life; 1,200 deaths were registered from it in 1891, but these are no measure either of its prevalence or of its danger. Indirectly it is the cause of numerous deaths from hydrocephalus, convulsions, and respiratory disease, but there are no means of determining the number. Of the prevalence of rickets there can be no doubt, *e.g.*, at the Liverpool Infirmary for Children over 500 cases of rickets pass under observation annually, and are treated. Most of the deformities of children so obvious in our crowded towns are due to this disease. The children suffering from rickets are weak and debilitated; prone to be attacked with any prevailing illness, which is also more likely to prove fatal. If they escape any intercurrent illness, they are as likely as not to be left with deformed chests, with thickened and enlarged skulls, and with crooked legs. It is not necessary for me to discuss the disease medically, suffice it to say that it may be regarded as a wholly preventable form of infant peril; that it is always due to faulty nutrition, that it is most frequently associated with artificial feeding; that it always has an evil influence on the development of the child, both

physically and mentally. The connection between the prevalence of rickets and a very soft water supply has been urged, and the case of the city of Glasgow instanced; but we may, for the purposes of the present paper at least, content ourselves by regarding it as due to faulty nutrition, and leave out of our consideration the relative share which water and food take in its production.

Tubercular Diseases.—The group of tubercular diseases includes hydrocephalus (tubercular meningitis), tabes mesenterica, phthisis, and other forms of tuberculosis, including scrofula.

TABLE XXVII.—*Mortality per 1,000 Living, 0—5 Years.*
Tubercular Diseases.

Years.	Phthisis.	Hydrocephalus.	Other Tuberculoses.
1851-60	13·05	25·39	19·20
'61-70	9·68	22·13	22·67
'71-80	7·67	19·00	25·50

TABLE XXVIII.—*Mortality at Age Periods, 1871-80, per 1,000 Living.*

Years.	Scrofula.	Tabes.	Phthisis.	Hydrocephalus.
0—1	11·89	53·2	14·0	36·8
1—2	7·49	29·6	11·7	30·1
2—3	2·89	8·85	5·38	12·4
3—4	1·71	3·59	3·38	7·57
4—5	0·13	2·14	3·00	5·88
0—5	5·21	20·2	7·66	19·00

Tubercular meningitis, tabes mesenterica, and scrofula, are all really diseases of early childhood. The death-rate from these causes diminishes year by year. On the other hand the death-rate from phthisis, though it also diminishes year by year during the first few years of life, afterwards rises to a point far beyond the mortality during the first year of life. The liability to tubercular disease is known to be strongly hereditary, and to a certain extent therefore these diseases cannot be considered as wholly preventable perils of infant life. At the same time tuberculosis is a frequent sequela of specific fevers (particularly measles), and is also induced by insanitary surroundings, damp, privation, want, and neglect; so that the tuberculoses are after all to a certain extent preventable diseases. I need not here discuss the communicability of phthisis, but I would call attention to the excessive mortality from this disease among those who live in overcrowded

apartments. Tubercular disease is also induced more readily in the offspring of those who are related by blood, who are weakened by dissipation or want. How far tuberculosis is due to the ingestion of unsound meat and food is difficult to say. The immunity of Jews from this disease is said to be due to the care with which they select animals to be slaughtered for food. Moreover, *tabes mesenterica* is most frequent in infancy, during a period when milk forms the major part of the diet. It has been estimated that stall-fed cattle are tubercular from 2 to 50 per cent. Tubercle bacilli have been found in the milk of tuberculous cows.

VI.—LOCAL DISEASES.

Local diseases include diseases of special organs of the nervous system, of the organs of special sense, of the circulatory system, of the respiratory system, of the digestive, lymphatic, urinary systems, of the organs of generation, of locomotion, of the integumentary system. We need only concern ourselves at any length with diseases of the nervous, respiratory, and digestive systems. About 20 per cent. of deaths from local diseases occur in infancy, and about 35 per cent. under the age of 5 years. It is seen that early childhood is much more liable to local disease than to constitutional disease.

A.—DISEASES OF THE ORGANS OF SPECIAL SENSE.

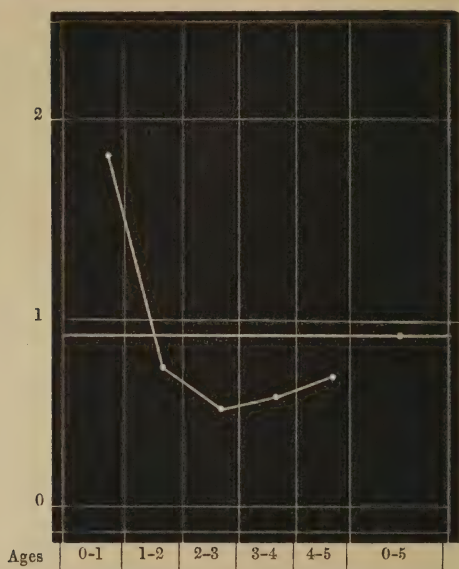
Diseases of these organs are rarely fatal. The ear diseases of childhood are generally sequelæ of specific fevers. The ophthalmia of early infancy however constitutes a grave peril of infant life. It is wholly preventable by care and cleanliness. It has been estimated that it is responsible for fully 30 per cent. of the blindness of the United Kingdom.

B.—DISEASES OF THE CIRCULATORY SYSTEM.

TABLE XXIX.—*Mortality at Age Periods, 1871-80.*

Age.	
0—1	1·810
1—2	0·760
2—3	0·538
3—4	0·580
4—5	0·705
<hr/>	
0—5	0·900
<hr/>	

Circulatory diseases at ages 0—5 years per 1,000 living.



The excessive mortality during the first year is probably due to congenital disease, and ought therefore to be included among deaths from developmental diseases. The increasing frequency of heart diseases as a cause of death in subsequent years must be ascribed to previous attacks of specific fevers.

C.—DISEASES OF THE RESPIRATORY SYSTEM.

The consideration of diseases of the respiratory system introduces a new factor, previously not considered by us, into the ætiology of infant mortality. In 1847 Mr. Bateman, in a paper read before the Liverpool Literary and Philosophical Society, sought to explain excessive infant mortality by the great susceptibility of infants to the influence of cold. There is no doubt a certain truth in this belief. The infant is less able to adapt itself to sudden changes in environment. The clothing of infants, which is dictated by the arbitrary rule of fashion, is utterly unsuited for the maintenance of sound health. The short sleeves and socks imposed from time immemorial on sturdy and delicate infants alike, whether during genial summer or during severe winter, are quite insufficient to protect infants from changes of temperature, or even to maintain sufficient warmth. Among the poorer classes the clothing is insufficient for other reasons, though a tendency to follow fashion is also observable. The clothing of children of

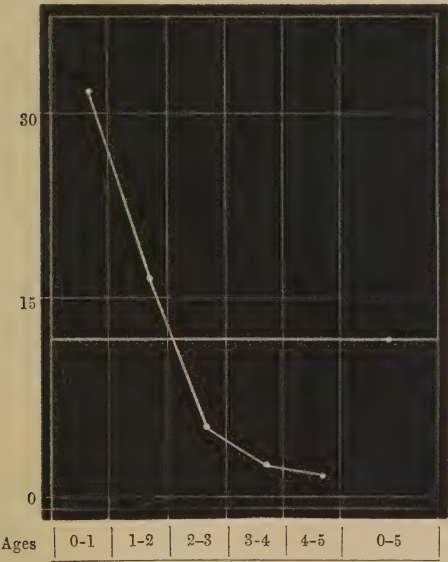
tender years requires careful attention, and to the neglect of this very obvious precaution many of the diseases of the organs of respiration must be traced.

Diseases of the respiratory system are most frequent in early life: 44 per cent. of all deaths from these diseases occur under the age of 5 years:—

TABLE XXX.—*Diseases of Respiratory System. Mortality, 1871-80.*

Age.	
0—1 year	31·8
1—2 years	16·9
2—3 „	5·58
3—4 „	2·73
4—5 „	1·64
<hr/>	
0—5 years	12·0
<hr/>	

Respiratory diseases at ages 0—5 years per 1,000 living.



The majority are due to bronchitis and to pneumonia—we have already considered the deaths from croup. In 1881 42 per cent. of the deaths from bronchitis, and 45 per cent. of the deaths from pneumonia occurred under the age of 1 year. It is seen that as age advances, deaths from pneumonia become relatively more frequent than deaths from bronchitis:—

TABLE XXXI.—1881. *Deaths from Bronchitis and Pneumonia.*

Age.	Population.	Deaths from		Death-Rates per 1,000 Living.	
		Bronchitis.	Pneumonia.	Bronchitis.	Pneumonia.
0—1 year	753,113	14,104	5,119	18·7	6·8
1—2 years....	684,412	6,230	3,286	9·1	4·8
2—3 „	704,409	1,900	1,255	2·7	1·8
3—4 „	691,695	837	745	1·2	1·07
4—5 „	687,235	449	451	0·65	0·65
0—5 years....	3,520,864	23,520	10,856	6·6	3·08

The accumulating evidence in favour of the specific nature of certain cases of pneumonia when it occurs as a primary disease, partly explains the increasing frequency of it in later years. Pre-disposing causes as to the occurrence of respiratory disease are found in the debility from bad or insufficient food, from privation, and from exposure to cold, and from foul air, due to overcrowding and defective drainage.

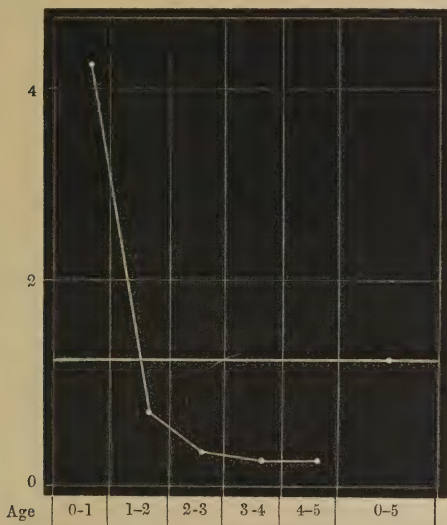
D.—DISEASES OF THE DIGESTIVE SYSTEM.

Deaths of infants and children under 5 years only accounted for 18 per cent. of the total deaths from digestive disorders. This small percentage is explained, as I have already pointed out, by the large number of deaths primarily due to digestive disorders being otherwise classified.

TABLE XXXII.—*Diseases of Digestive System. Mortality, 1871-80.*

Age.	
0—1 year	4·34
1—2 years	0·788
2—3 „	0·366
3—4 „	0·270
4—5 „	0·239
0—5 years	1·27

Digestive diseases at ages 0—5 years per 1,000 living.



The two most frequent causes of death from digestive disorders in infants are dentition and enteritis. The latter accounted for (1881-90) 14,692 deaths, and these deaths ought really to be added to the deaths ascribed to diarrhoea; from dentition 25,254 deaths were registered. I cannot avoid insisting upon the fact that dentition is not in itself an efficient cause of death. Dentition is a purely physiological process, and its danger arises from the fact, for the most part, that at this period breast milk alone is found insufficient for the growing infant, and needs to be supplemented by some form of artificial food. The child is irritable from the process of dentition. The feeding and the dentition together succeed in setting up a gastric irritation, which leads to death in some cases. A child never dies from dentition alone. Whatever the concomitant disorder may be, it is to that disorder death ought to be assigned, and dentition may be recorded as a secondary cause. In this connection it is necessary to refer to the similar form of the curves representing the annual numbers of deaths from certain diseases. Messrs. Buchan and Mitchell's diagrams, modified by Dr. Longstaff, and included by him in his work on "Studies in Statistics," show that if we take the curve for diarrhoea as our standard the curves for the following causes of death—

Simple or English cholera,
Dysentery,
Want of breast milk,
Tabes mesenterica,

Thrush,
Jaundice,
Enteritis,
Atrophy and debility,

resemble it, all to a greater or less extent. In the case of the last seven they exhibit less ample fluctuations (Longstaff, p. 280, *loc. cit.*). These various diseases are all primarily referable to digestive disorders, and hence the importance of food and feeding in the ætiology of infant mortality is emphasised.

In further investigation of the influence of diet in the production of digestive disorders, I analysed my records of 500 consecutive cases of infants and children under 1 year 6 months of age brought to the out-patient department of the Infirmary for Children, Liverpool. The analysis took into account methods of feeding (whether the children were entirely breast fed, or partially breast fed, receiving some food in addition to breast milk, or entirely fed with food, receiving no breast milk), and also the complaints from which the children suffered. By food, a variety of kinds of nourishment is to be understood (milk, prepared foods, &c.). The conclusions are summarised, the data upon which they are based being included in the Appendix.

(1.) The greater proportion of the illness from which infants suffer is referable to disorders of the alimentary canal.

(2.) Infants brought up entirely on breast milk are least liable to such digestive disorders; infants fed partially on the breast and partially on food, suffer less frequently than infants fed entirely on artificial food.

(3.) Breast fed children are more liable to such disorders during early and during late infancy, whereas artificially fed children are most liable during the earlier months, and partially breast fed children during the later months. These results were to be expected.

(4.) From 0—3 months of age 50 per cent. of infants are breast fed, nearly 70 per cent. partially or wholly breast fed; from 3—6 months 40 per cent. are breast fed, and 60 per cent. partially or wholly breast fed; from 6—12 months 35 per cent. are breast fed, and 60 per cent. partially or wholly breast fed.

(5.) Of 87 consecutive cases, 23 per cent. were weaned under 3 months, 15 per cent. were weaned 3—9 months of age, and 50 per cent. from 9—15 months. These conclusions are in accord with Dr. Hope's report in regard to fatal infantile diarrhoea previously referred to.

E.—DISEASES OF THE NERVOUS SYSTEM.

Deaths from diseases of the nervous system under the age of 5 years account for 44 per cent. of the total deaths from nervous diseases, and in 1889, 65 per cent. of the deaths from these diseases were registered from convulsions. It must be clearly

understood that death from convulsions pure and simple very rarely occurs. Convulsions are only symptomatic. They are the *exitus letalis* of many diseases, I have already referred to their connection with diarrhoea. They may usher in acute specific fevers. They are however generally due to some form of peripheral irritation, most usually from gastric disorders; sometimes from dentition, but rarely unless gastric disorder is also present. They are doubtless often the proximate cause of death, but death ought not to be registered as due to convulsions. It is to be expected that deaths registered from this cause will gradually diminish:—

Nervous diseases at ages 0—5 years per 1,000 living.

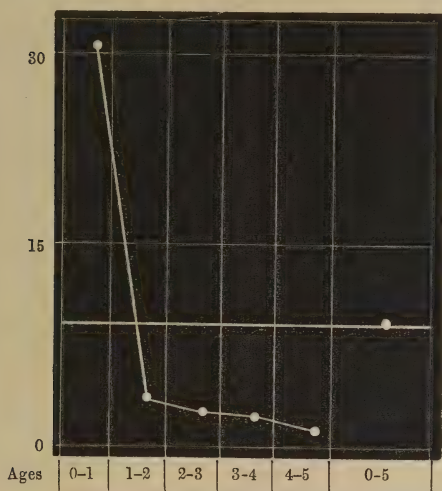
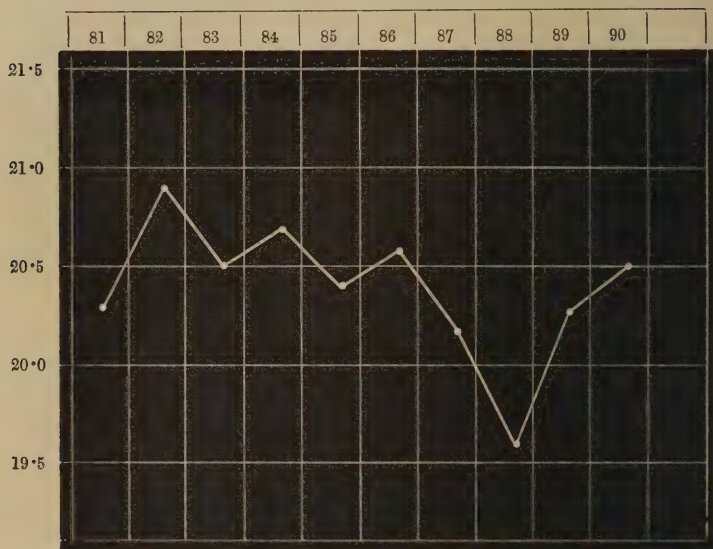


TABLE XXXIII.—*Diseases of Nervous System, 1871-80. Mortality.*

Age.	
0—1.....	30.8
1—2.....	6.67
2—3.....	2.62
3—4.....	1.59
4—5.....	1.07
0—5.....	9.08

England, Deaths from Convulsions.

TABLE XXXIV.—*Rates of Infant Mortality, Convulsions, 1881-90.*

1881	20.35	1886	20.68
'82	20.76	'87	20.15
'83	20.52	'88	19.60
'84	20.69	'89	20.31
'85	20.28	'90	20.62

The death-rate from convulsions is seen to be fairly constant.

VII.

Deaths from VIOLENCE I shall consider again.

VIII.—DEATHS FROM OTHER AND ILL-DEFINED CAUSES.

Lastly we have to consider a heterogeneous collection of deaths. Nearly 80 per cent. of the deaths of an indeterminate or ill specified nature occur in infancy, and of these no fewer than 73 per cent. are ascribed to debility, atrophy, and inanition—in fact, from the wasting disorders of infant life which are rarely, if ever, seen among the infants of persons of the better classes of society. Some few are doubtless cases of unrecognised tubercular disease. Others may also depend upon some organic disease, but the vast majority of them occur in neglected, badly fed, starved children. I have already (p. 13) referred to some of these cases as a sequela of infantile diarrhoea. I have referred (p. 16) to the simultaneous variation in the number of deaths from this cause

and from other diseases which are mainly assignable to disordered digestion.

England: debility, atrophy, and inanition.

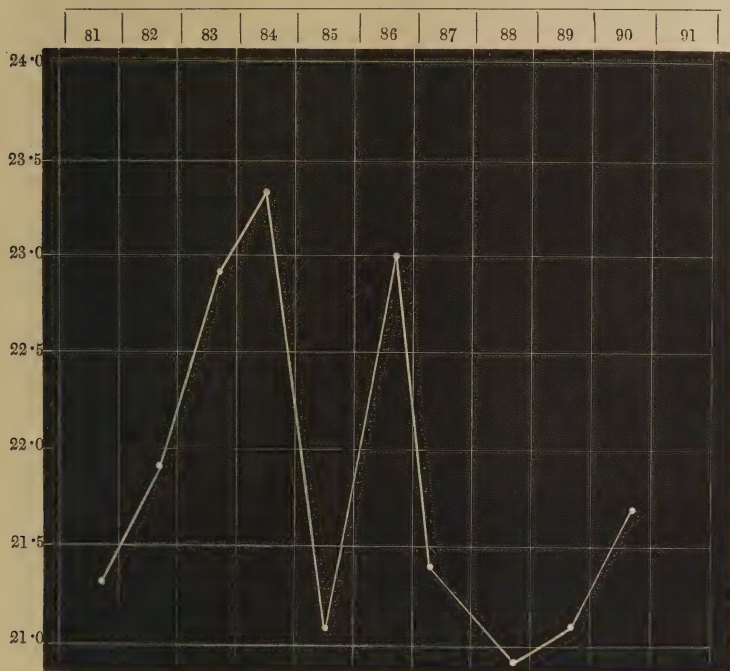


TABLE XXXV.—*Rates of Infant Mortality, 1881-90, Debility.*

1881	21'32	1886	23'03
'82	21'87	'87	21'38
'83	22'95	'88	20'93
'84	23'35	'89	21'01
'85	21'13	'90	21'71

It is the experience of every hospital surgeon that children who are progressively wasting, who are dying before admission as in-patients, rapidly improve, only to relapse and die after discharge. There is no organic disease; the children die, in reality, from starvation.

Summary.

Let us sum up what we have learnt of the perils of infant life from a study of the mortality statistics of the Registrar-General. The perils may be classified as under:—

(1.) The danger of contracting zymotic disease, with risk of life or of permanent injury, *e.g.*, blindness from small pox, kidney disease from scarlet fever, tuberculosis from measles.

(2.) The injury to health and the frequent death of infants who are badly fed, *i.e.*, with improper food, or who are insufficiently fed. These dangers induce diarrhœa, digestive disorders, and the wasting diseases of infancy. Deaths from convulsions and dentition must be considered in this connection.

(3.) The risk of diseases of the respiratory system, depending upon overcrowding and exposure to cold, and upon the debility due to privation, bad feeding, or disease (*e.g.*, rickets, specific fevers, &c.).

(4.) Simple neglect, *e.g.*, blindness from the untreated ophthalmia of infants.

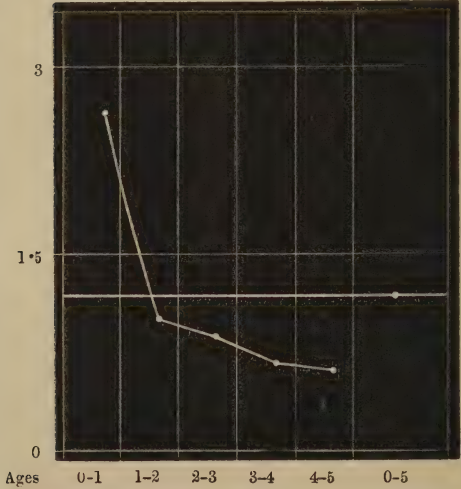
The danger to infant life from all these causes is excessive. Their relative importance has been indicated by the statistics which have been quoted. We have next to consider deaths from violence where cause and effect are obvious. We shall then pass to the discussion of certain conditions (social and municipal) which tend to excessive mortality from the diseases we have already considered, as well as from developmental diseases.

DEATHS FROM VIOLENCE.

TABLE XXXVI.—*Mortality from Violence per 1,000 Living, 1871-80.*

Age.		
0—1 year	.....	2·63
1—2 years	.....	1·02
2—3 „	.....	0·927
3—4 „	.....	0·714
4—5 „	.....	0·607
		<hr/>
0—5 years	.....	1·21

Violence at ages 0—5 years per 1,000 living.



Deaths from violence are worthy of careful consideration; they afford in some degree a means of measuring two other perils of child life—deaths by accident, and deaths by design. The deaths by accident are in general due to carelessness and want of proper supervision. They may be dismissed with this brief reference. It must however be remembered that simple carelessness is often only passive neglect, and that it is difficult in many cases to determine when such passive neglect becomes actually criminal.

Deaths from violence may be classified as under:—

1. <i>Accidental</i>	{ neglect and carelessness	{ simple neglect cuts, stabs poisoning and drowning burns, scalds navel hæmorrhage
	{ ill defined	{ accident fracture injury at birth
2. <i>Suffocation in bed.</i>		
3. <i>Intention</i>	{ murder manslaughter	

All deaths from these causes may be regarded as preventable in a perfect state of society. The number of deaths registered every year varies greatly, not only for the whole country, but the rate of infant mortality from violence in different districts varies enormously. The rate of infant mortality (1871-80) for a few towns is given in the following table:—

TABLE XXXVII.—*Rates of Infant Mortality from Violence, 1871-80.*

All England.....	2'37	Manchester	2'41
	—	Oldham	0'93
Liverpool	14'00	Bolton	0'93
Birmingham	10'92	Halifax.....	0'53
Newcastle.....	4'25	Blackburn	0'525
Kidderminster.....	2'87	Carmarthen	0'36

A high death-rate from violence is not necessarily associated with a high death-rate from all causes, but there is a general relation between the two rates.

TABLE XXXVIII.—*Rates of Infant Mortality from Violence and from all Causes.*

	Rate of Infant Mortality.	Violence Rate.
	217	14'0
	179	10'92
	176	4'25
	165	Over 2
	159	Under 2

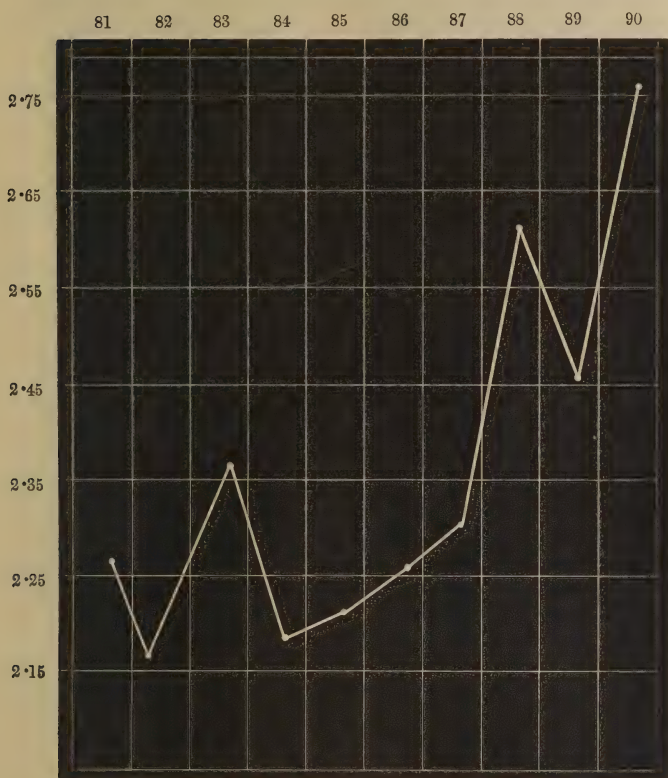
The above table has been compiled from the statistics of fifty-eight northern towns. (See Appendix. These towns were chosen as they had been selected for examination by Messrs. Poynting and Dendy in their report on intemperance.) If the rate of violence be further subdivided it is found, *e.g.*, when it is below 1, that the rate of infant mortality is 164. When a violence rate is above 1 and below 2 the rate of infant mortality is 154. It is therefore obvious that a high death-rate from violence is not necessarily associated with a high rate of infant mortality from all causes. The association indicated (limited as it is) is nevertheless worthy of notice, for it may be inferred that where a high death-rate from violence exists, the same causes which tend to violence would also tend to magnify the general rate. If one form of death is preventable, so also is the other, to a certain degree.

The analysis of the deaths for 1889 showed that the rate of mortality from violence in infancy was 2'4 in males and 2'5 in females, and that violent deaths at the age period (0—1 year) formed 8'7 per cent. of all deaths from violence in males, and 22 per cent. of all deaths from violence in females. The higher percentage at early age periods in females is due to the greater liability of adult males to accidents from the nature of their employment. It has no significance in reference to the present discussion. The detailed analysis of deaths from violence, 1881-90, gives the following table :—

TABLE XXXIX.—*Deaths from Violence, 1881-90.*

Fractures	121
Gunshot	2
Cuts, stabs	15
Burns, scalds	1,102
Poison	252
Drowning	334
Suffocation	14,956
Others	2,685
Murder	1,029

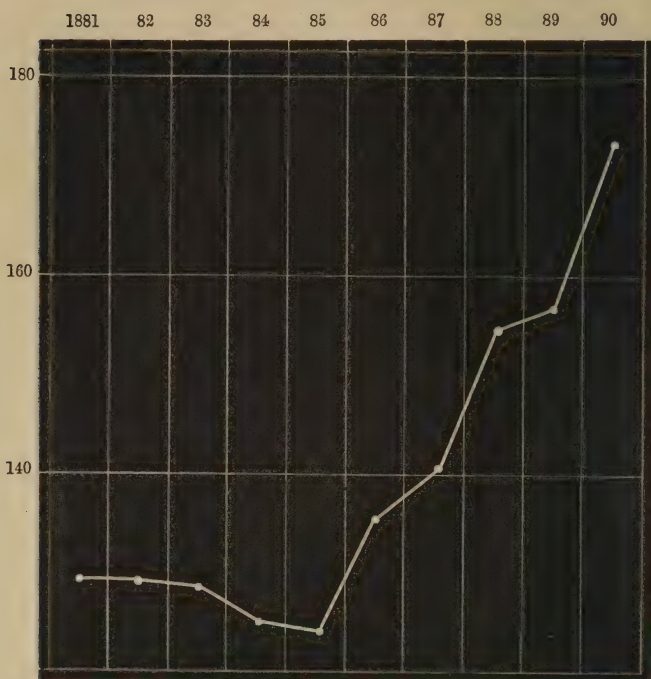
Deaths from violence, England, 1881-90.



Deaths from suffocation and murder require special consideration.

Deaths from suffocation.—The majority of these cases are due to suffocation in bed, either from overlying or by the bedclothes. This form of death is so nearly criminal, that I append the statistics in detail. It is interesting to note that it was in reference to overlying, that the judgment of Solomon was delivered, and that even this early case occurred with dissolute people.

Suffocation in bed. England: per 1,000,000 births.

TABLE XL.—*Suffocation in Bed, 1881-90.*

Year.	Males.	Females.	Total.	Rate per Million Births.
1881	578	571	1,149	130
'82	600	560	1,160	130
'83	577	571	1,148	129
'84	589	541	1,130	125
'85	549	561	1,110	124
'86	659	573	1,232	136
'87	628	624	1,252	141
'88	655	712	1,367	155
'89	689	697	1,386	157
'90	767	750	1,517	174
1881-90.....	6,391	6,160	12,451	140

It is seen that within recent years there has been an alarming increase in deaths from this cause. Of 2,020 inquests held on infants, 767 deaths were found to be due to suffocation in bed, and 1,253 to other causes. Analysing the deaths from suffocation in bed, according to the day of the week upon which death occurred, the following distribution was found by the Registrar-General. It

is seen that while deaths from violence other than suffocation are fairly evenly distributed over the days of the week, deaths from suffocation in bed are chiefly referred to Sunday, that is to Saturday night :—

TABLE XLI.—*Inquests on Infants.*

Day.	Suffocation.	Other Cases.
Sunday	283	180
Monday	124	132
Tuesday	137	145
Wednesday.....	116	139
Thursday	115	136
Friday	107	128
Saturday	118	140
	1,000	1,000

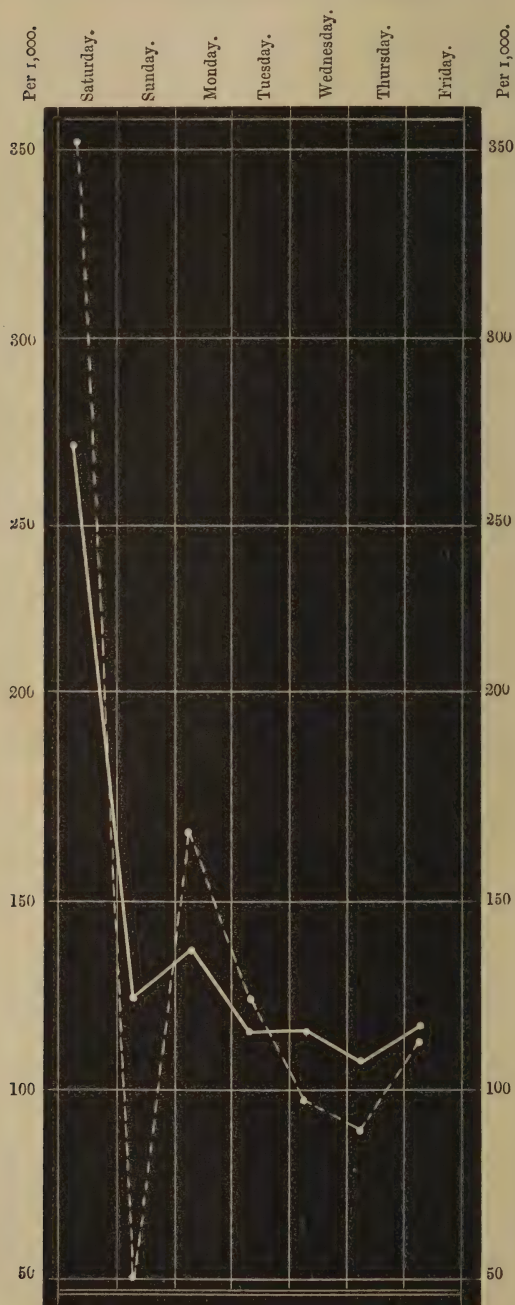
Sixty per cent. of deaths from suffocation in bed take place in the winter months, and 40 per cent. during the summer months. The curious distribution of deaths according to season and days of the week has been explained by the supposition that these deaths are due to the drunkenness of the parents. I proceeded to investigate this association. Taking the apprehensions for drunkenness during 1891 in Liverpool, it is found that the 8,402 arrests were distributed as follows over the days of the week. There is no reason to doubt but that Liverpool may be taken as a typical town, and that the same tendency to drunkenness would be found elsewhere on the corresponding days :—

TABLE XLII.—1891. *Liverpool Apprehensions for Drunkenness.*

Day.	Arrests.	Percentage.
Sunday	423	5'0
Monday	1,439	17'1
Tuesday	1,047	12'4
Wednesday.....	815	9'7
Thursday	772	9'1
Friday	944	11'2
Saturday	2,962	35'2

The parallelism between the figures relating to drunkenness and suffocation in bed is extraordinary. If the figures be represented graphically, the identical forms of the two curves are very striking. It cannot be regarded as accidental; it can only be explained by the mutual dependence of the two curves upon one another.

Apprehensions for drunkenness (dotted line).
Deaths from suffocation in bed (continuous line).



If the death-rate from violence of infants is considered in the northern towns (excluding five towns with an excessively high rate of violence, Birmingham, Nottingham, Leeds, Berwick, Kidderminster, and where the rate of intemperance, as measured by the apprehensions for drunkenness per 1,000 inhabitants, is low), it is seen that it varies with the rate of intemperance. Local opinion and custom affect the apprehensions for drunkenness to such an extent that though a large number of apprehensions is evidence of much drinking, the contrary inference is not true:—

TABLE XLIII.

Number of Towns.	Death-Rate from Violence.	Rate of Intemperance.
1	14'0	42'0
1	4'25	37'2
9	1'56	35--25
6	1'24	25--20
7	1'18	20--15
15	1'13	15--10
13	1'07	Below 10

The towns were arranged in order of intemperance, and then the rates of violence were taken and averages found. This relation confirms the inference to be drawn from the incidence of suffocation in bed on the different days of the week.

2. *Deaths from Murder.*—Of 1,517 inquests held in Liverpool during 1890, 460 or 30 per cent. were held on infants. If the deaths from homicide for a quarter of a century, 1863-87 (Registrar-General's report), be considered, the incidence of homicide on infants is shown most remarkably:—

TABLE XLIV.—*Deaths from Homicide, 1863-87.*

Age.	Male.	Female.	Percentage.
			Per cent.
0	1,626	1,629	61
1	51	55	—
2	32	38	—
3	24	30	—
4	15	25	—
Under 5	1,748	1,777	66
Over 5.....	908	881	34
Total.....	2,656	2,658	—

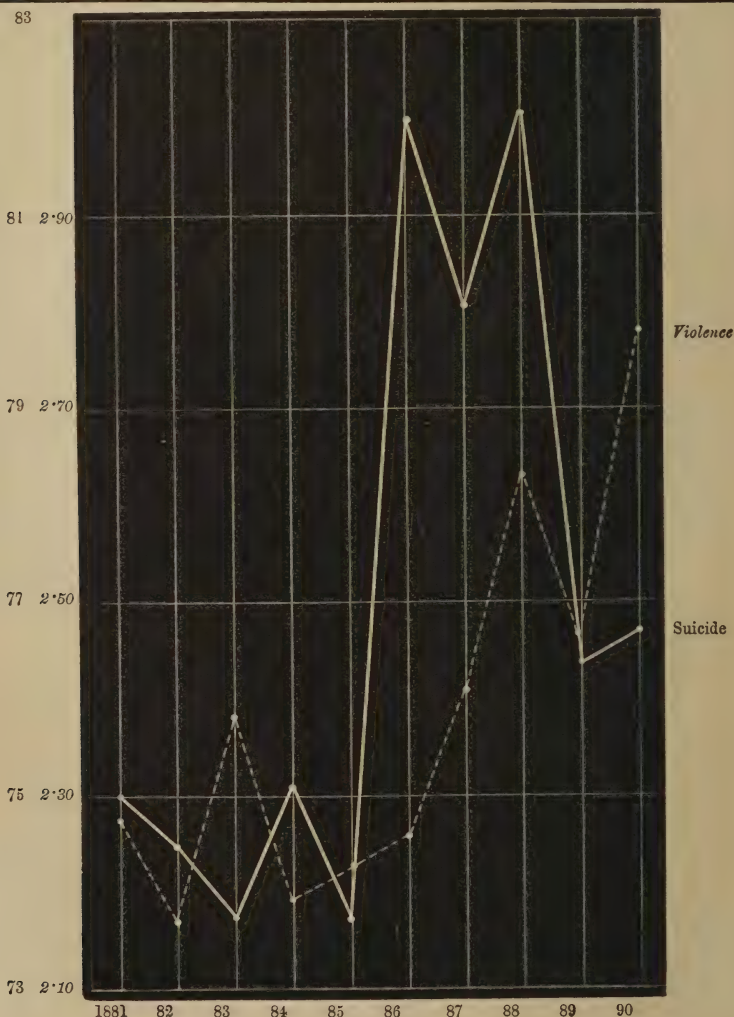
It is thus seen that 3,525 of the 5,314 cases of homicide (or 66 per cent.) take place under 5 years of age, and 3,355 (or 61 per cent.) under the age of 1 year. The light estimation in which infant life is held cannot be more forcibly expressed than by the mere quotation of these figures.

It occurred to me that a relation might exist between deaths from violence and suicide, but the following figures show that there is no obvious association.

TABLE XLIVA.—*Deaths from Suicide per Million, and Infant Deaths per 1,000 Births from Violence.*

	Suicide.	Under 1 Year: Violence.		Suicide.	Under 1 Year: Violence.
1881	75'0	2'27	1886	81'9	2'26
'82	74'5	2'17	'87	79'9	2'40
'83	73'1	2'37	'88	82'0	2'62
'84	75'1	2'19	'89	76'3	2'46
'85	73'7	2'22	'90	76'6	2'76

83



I have shown that deaths from violence are associated in a certain measure with high infant mortality (p. 37), that the majority are due to suffocation—chiefly suffocation in bed—and that there is a direct connection between suffocation in bed and intemperance; I have further shown the terrible incidence of homicide in infancy and in early childhood. It is therefore obvious that more efficient protection is urgently needed. We pass now to the consideration of certain conditions which affect infant life more indirectly.

1. URBAN AND RURAL DISTRICTS.—Reference has already been made to the greater mortality in urban districts than in rural districts, and the following table is of interest as districts with varying rates of mortality are compared:—

TABLE XLV.—*Mortality per 1,000 Living at each Age, 1889.*

[Registrar-General's Report, 1889.]

Area.	0—3 Months.	3—6 Months.	6—12 Months.
England and Wales	286	128	103
Leicestershire.....	338	180	118
Lancashire	321	162	140
South Eastern Division	227	89	68
„ Western „	233	90	76

The same variation in mortality in the case of children under 5 years of age in the different districts.

Considering now the factors which cause these differences in mortality, the first great difference between urban and rural districts is density of population.

Dr. Farr believed that the rate of mortality of population was a function of its density—as measured either by the population per square mile, or by the acreage to each person. The rate of mortality was found to vary as the twelfth root of the density of population.

TABLE XLVI.—*Mortality 0—5 Years in its Relation to Density.*

[FARR, *loc. cit.*, pp. 175 and 176.]

District.	I.	II.	III.	IV.	V.	VI.	VII.
Density of population..	166	186	379	1,718	4,499	12,357	65,823
Male mortality	41	51	68	88	101	118	145
Female „	34	44	58	76	89	106	134
Mean „	38	48	63	82	95	112	140

The influence of mere density of population is greatest in childhood and after maturity. It is least felt in early adult life. The

rate of infant mortality varies also just as the rate of mortality under 5 years varies. The following rough summary of the county statistics of the Registrar-General for 1891, shows that the rate of infant mortality tends to vary with the density of population:—

TABLE XLVII.

Acres to a Person.	Rate of Infant Mortality.
Less than 1 acre	151
More than 1, less than 3	131
„ 3	120

It is scarcely fair to take large areas, but these were the only statistics within my reach. They serve to illustrate the general truth, that mortality varies with density of population.

The increase in mortality (0—5 years) due to density of population is found to be due to pulmonary disease, to phthisis, and to zymotic diseases, including diarrhœa. Of these the only one which can be really attributed to *mere* density of population is the increased risk of infectious disease. “The direct consequences,” writes Dr. Ogle, “of close aggregation, *i.e.*, the risks of fouling “air, water, and soil, are comparatively insignificant with the “indirect consequences. These depend upon privation, filth, “crime, intemperance, and unhealthy industries.” The direct consequences mentioned by Dr. Ogle can be neutralised by perfect sanitation. The increased risk of zymotic disease remains. Density of population is therefore an over-rated factor in the production of excessive mortality.

2. INSANITATION.—The crude or general death-rate is a fair measure of the sanitary condition of any district, but it ought to be corrected for age and sex distribution. We find that the rate of infant mortality varies with the general death-rate.

TABLE XLVIII.*—*Death-Rates at all Ages, and Rates of Infant Mortality.*

Death-Rate.	Rate of Infant Mortality.
Over 25	195
„ 20	173
Under 20	164

* See Appendix, p. 86.

Closely associated with the two factors just considered is—

3. THE INFLUENCE OF THE DWELLING HOUSE.—The class of dwelling house occupied affects the health of the residents. By overcrowding, or by what practically amounts to overcrowding—viz., bad ventilation—the total death-rate, as well as the death-rate from infectious diseases, from phthisis, from diseases of the respiratory system, and from diarrhœa, are all excessive. The effect of overcrowding was investigated by Carnelley in Dundee (*vide* “Royal Society: Phil. Trans.”). The influence of back to back houses has been investigated by Dr. Tatham of Manchester. Statistics are included in the Appendix. The main fault in the construction of such houses is the want of through ventilation. It is unnecessary for me to discuss the influence of overcrowding. Well known examples of its evil influence are numerous, *e.g.*, the history of the Black Hole of Calcutta, the excessive mortality in the army and navy, attributed by the Sanitary Commissioners to the vitiated atmosphere of the barrack room.

By the demolition of existing insanitary property, and by rebuilding on the cleared site huge blocks of “model” dwellings, a new class of house has been introduced, and a short epitome of the investigation made by Dr. Newsholme into the vital statistics of the model dwellings in London is best included here. There was a population of 18,453 persons, occupying 10,144 rooms (Appendix). The density of population was as high as 751 per acre in the case of the Peabody buildings. The birth-rate was in excess of the general birth-rate for all London by about 10 per 1,000; the death-rate was less than the London rate (1·2 per cent.). The rate of infant mortality was considerably less (13·7 per cent.). We are now considering the Peabody dwelling statistics for 1884.

If the statistics are however analysed in detail for all the block dwellings, it is seen that the death-rates from scarlet fever, diphtheria, measles, whooping cough, phthisis, respiratory diseases, violence, and ill-defined causes were all in excess. Deaths from typhoid fever and diarrhœa were below the average for London. In other words, even with good sanitary conditions and improved construction, the mortality from zymotics was excessive. The lowness of the typhoid death-rate is evidence of the improved sanitation. The greater mortality from the causes referred to must be attributed to the density of population. The age distribution which obtains in the buildings is favourable to a low death-rate, and a certain selection of population is inevitable. I cannot therefore believe that the construction of block dwellings has been attended with sufficiently good results to justify a continuance of the plan. The statistics do not warrant the enormous

outlay by any proof of an adequate return in benefit to public health. Yet, compared with the mortality that prevailed before the demolition of the insanitary property previously existing on the site, the prevailing mortality is evidence of the great influence which the dwelling house exerts on health. In the Nash Grove model dwellings erected by the Corporation of Liverpool, the death-rate is less than half what it was previously over the same area; the death-rate has fallen from 44 to a little over 20. Other plans of providing houses for the ejected inhabitants must be adopted. The demolition of insanitary areas is an urgent necessity, but the erection of block dwellings is a practical error, and must tend in time to the aggravation of the evil which it is desired to eradicate.

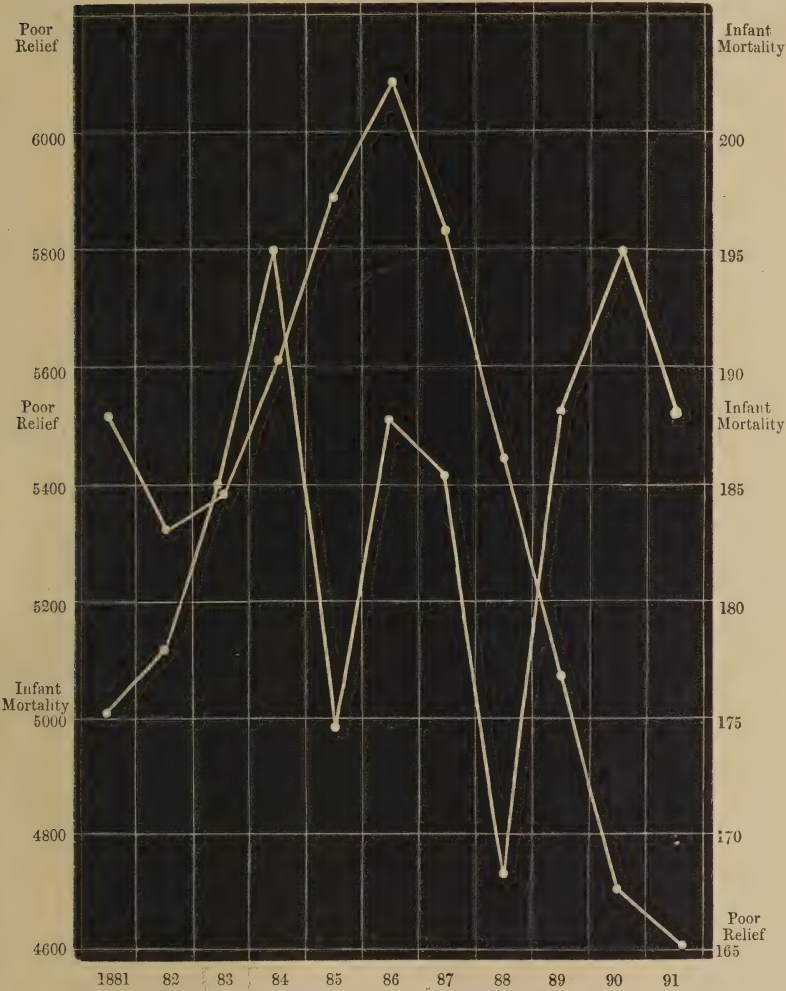
4. NATIONAL PROSPERITY.—In my introduction I referred to the association between the rates of mortality and the rates of wages. This factor is also more powerfully operative in urban districts.

A. If we examine the *poor law statistics*, using them as a measure of the amount of destitution prevalent, no very definite relation is shown between the number per 1,000 in receipt of poor law relief and the rate of infant mortality.

TABLE XLIX.—*Poor Law Statistics and Rates of Infant Mortality, England and Wales.*

Year.	In Receipt of Relief per 1,000.	Rate of Infant Mortality.
1851-55	49·0	156
'56-60	43·8	152
'61-65	44·4	151
'66-70	42·7	157
'71-75	34·7	153
'76-80	27·8	145
'81-85	26·7	139
'86-90	25·5	145

In and Out-Door Relief, Liverpool (Numbers), and Infant Mortality, per 1,000 Births.



It is seen that there has been an almost continuous decline in the percentage in receipt of poor law relief. Even the annual variations in the rates of infant mortality and of poor law relief are quite independent of each other. Nor was I able to trace a local connection even after careful analysis of the figures for Liverpool. It is worthy of remark that in times of great distress, *e.g.*, during the Lancashire cotton famine and during the siege of

Paris, there was a great fall in the rate of infant mortality. These facts show that prosperity and privation do not react directly upon the rate of mortality, but are remoter causes affecting infant mortality. In times of prosperity other factors neutralise the beneficial influence of "plenty," e.g., high wages are associated with much drinking, and brisk trade with more general employment of women. So that neglect and want must be considered as inevitable concomitants of prosperity.

Poor law statistics are drawn from too small sections of the community—and that not a representative section—to give trustworthy results in this investigation.

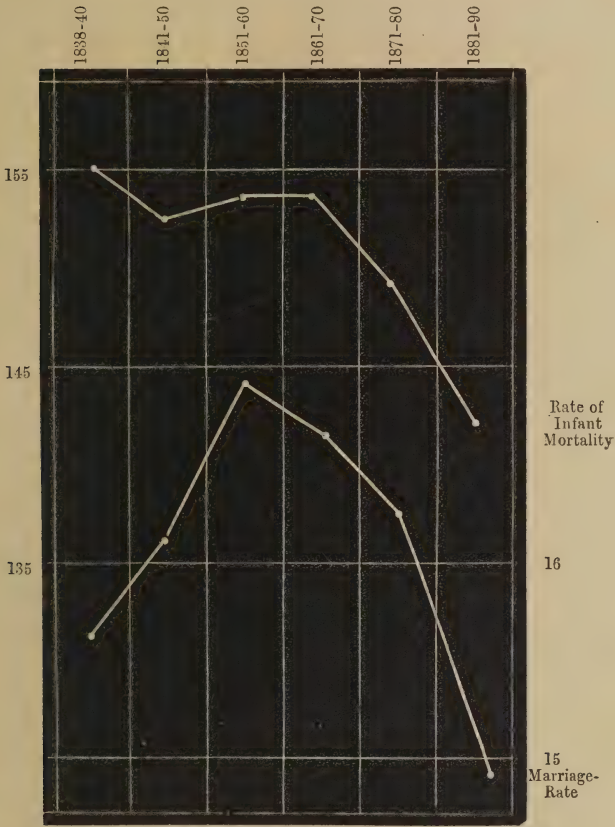
B.—THE MARRIAGE-RATE.

The marriage-rate is a useful index of national prosperity. A high marriage-rate is associated with good trade, and it was therefore expected that with a high marriage-rate conditions would be favourable to a low rate of infant mortality. It will be seen that when the marriage-rates at decennial intervals, 1838-90, are compared with the rates of infant mortality, that both have declined simultaneously since 1851. If the rates at quinquennial periods are compared, no very definite relation is noticed between the variations. A fall in the marriage-rate was associated three times with a fall in the rate of infant mortality, and twice with a rise. A rise in the marriage-rate was associated four times with a fall, and once with a rise in the rate of infant mortality:—

TABLE L.—*Relation between the Marriage-Rate and the Rate of Infant Mortality.*

Years.	Marriage-Rate.	Rate of Infant Mortality.	Years.	Marriage-Rate.	Rate of Infant Mortality.
1838-40....	15·6	155	1866-70...	16·4	157
'41-45....	15·7	147	'71-75....	17·1	153
'46-50....	16·5	157	'76-80....	15·3	145
'51-55....	17·2	156	'81-85....	15·1	139
'56-60....	16·7	152	'86-90....	14·7	145
'61-65....	16·8	151			

Rate of infant mortality, all England.



On investigating local marriage-rates and rates of infant mortality a more definite relation was discoverable. In the northern towns, the rate of infant mortality was found to vary with the marriage-rate. The marriage-rate is acknowledged to vary with the state of trade, and a high marriage-rate is indicative of prosperity. It is always high in growing towns, and these are the districts where overcrowding occurs, where sanitary conditions are bad, where intemperance is greatest, where poverty, privation, and crime abound. These social conditions are at present inevitably associated with prosperity, and we are therefore not surprised to find that with a local high marriage-rate, a high rate of infant mortality prevails. Too absolute reliance cannot however be placed upon results merely depending upon averages.

TABLE LI.—*Marriage-Rates and Rates of Infant Mortality, 1871-80, Northern Towns.*

	Marriage-Rates.	Rates of Infant Mortality.
	30—25	191
	25—20	175
	20—15	161
	Under 15	128

The higher mortality, it must be remembered, does not depend upon a higher birth-rate. A high birth-rate is the natural consequence of a high marriage-rate, and in the same towns it was found that this association existed. The rate of infant mortality ought not to be affected thereby, for we are not considering the general death-rate.

TABLE LII.—*Marriage-Rates and Birth-Rates, Northern Towns, 1871-80.*

	Towns with Birth-Rate	Marriage-Rate.
	Under 35	16'27
	Over 35	19'01

If we consider the marriages of minors the rate of infant mortality is found to vary with the percentage of these marriages to the total marriages.

TABLE LIII.—*Marriage of Minors and Rates of Infant Mortality.*

Mean Rate of Infant Mortality in Twelve Towns.		Percentage of Marriages of Minors.	
High Death-Rates.	Low Death-Rates.	Males.	Females.
190	—	12'5	28'3
—	110	4'9	18'3

The importance of this relation will become obvious later.

C.—BIRTH-RATES.

We naturally pass to the consideration of the relation between the birth-rate and the rate of infant mortality. The birth-rate for all England and Wales increased continuously from the beginning of registration until a few years ago. Then it declined and again rose. No relation therefore exists between the general birth-rate and the rate of infant mortality for all England. But as I have already indicated, a local relation was discoverable in the northern towns. In each of these towns, it may be well to observe, there was a population exceeding 10,000.

A high birth-rate was found to be associated with a high rate of infant mortality.

TABLE LIV.—*Northern Towns, 1871-80. Birth-Rates and Rates of Infant Mortality.*

	Birth-Rate.	Rate of Infant Mortality.
	Over 35	168
	Under 35	144

It will be unnecessary for me to consider the question of over population as affecting infant mortality at any length, and thus seek to explain the above table. Over population is without a doubt a cause of excessive infant mortality in crowded cities; but with a wise distribution of population it would not have that influence. Large families need not be a cause of high mortality, for in South Africa, where there is an abnormally high birth-rate, the rate of infant mortality is low. Density of population is an economic mistake. It involves a struggle for existence which must inevitably result in the sacrifice of the weakest. A high rate of infant mortality, therefore, associated with a high birth-rate, is evidence that something is wrong in our condition of life, and that the close aggregation of a population in cities under the present conditions of existence is attended with a waste of child life. How much of this waste must be attributed to mere density of population, how much to the struggle for existence, must at present remain indeterminate. There are other factors, however, which tend to explain the simultaneous variation in birth-rates, marriage-rates, and rates of infant mortality.

The first of these is *INTEMPERANCE*.

It has been shown by Dendy and Poynting (Manchester Literary and Philosophical Society) that the rate of intemperance, as measured by the number of apprehensions for drunkenness per 1,000 inhabitants, varies with the density of population and with the rate of increase of the population—in other words, with the birth-rate. The quantity of alcoholic beverages consumed is known to vary with the Board of Trade returns, and is used as an index of national prosperity. The rate of increase of population is an index of local prosperity. Taking the mortality statistics for the decade 1871-80, and the drunkenness statistics for the mid-year 1876, the following relations were found to hold in the northern towns previously referred to:—

TABLE LV.—*Intemperance and Infant Mortality.*

Number of Towns.	Rate of Intemperance.	Rate of Infant Mortality.
3	26·5	217—200
16	16·5	199—170
28	15·9	169—140
9	12·6	Below 140

(A.) The rate of infant mortality varied with the rate of intemperance.

(B.) The rate of violence varied with the rate of intemperance.

Here therefore is one social condition which leads directly to the sacrifice of child life.

2. EMPLOYMENT OF WOMEN IN INDUSTRIAL OCCUPATIONS.—In Belgium the general death-rate, 1869-72, was 24·3. For the triennium 1885-88 it had fallen to 20·25, but the rate of infant mortality during the same period had risen from 148 to 159. It has been said that this increase is due to the more general employment of women in industrial occupations.

In endeavouring to estimate the effect of the employment of women upon the rate of infant mortality, two methods may be adopted: (a) The rates of mortality in districts where the sanitary conditions of the population are strictly comparable, but where different numbers of women are employed, must be investigated, and (b) the causes of the excess of infant mortality must be examined in detail in towns where the employment of women is most general. Then the results must be compared.

Dr. George Reid, County Medical Officer of Health for Staffordshire ("Prov. Medical Journal," October, 1892), published the following tables:—

TABLE LVI.—*Staffordshire. Groups of Towns, 1881-90.*

Groups of Towns.	Mean Population.	Rate of Infant Mortality.	General Death-Rate.		Zymotic Death-Rate.	Diarrhœa Death-Rate.
			Actual.	Hypothetical.		
1. Many women employed	112,078	195	22·8	19·8	3·17	2·8
2. Fewer „	161,560	166	19·4	18·9	2·45	2·0
3. Practically no women employed }	165,074	152	18·1	18·1	2·46	1·9

The sanitary conditions were strictly comparable. By the hypothetical general death-rate is meant the death-rate which would have prevailed in the groups of towns if the rate of infant mortality had been 152. The increasing zymotic death-rate with

the number of women employed is interesting, and probably arises from the increased risk of infection, due to day nurseries or day nursing. The death-rates from diarrhœa are specially important and significant.

A similar table was compiled for England:—

TABLE LVII.—*England. Groups of Towns, 1871-80.*

Groups of Towns.	Population.	Rate of Infant Mortality.	Diarrhœa Death-Rate.
1. Over 15 per cent. women workers	2,645,357	175	36
2. 10—15 per cent. „	1,500,954	171	37
3. Less than 10 per cent. „	1,127,010	154	32

These statistics, though less exact than the former, afford strong confirmatory evidence. It is therefore clear that an association exists between the general employment of women in industrial occupations and a high rate of infant mortality.

If we now investigate in more detail what are the causes of the greater mortality, it is seen to be largely due to deaths from convulsions, diarrhœa, and atrophy; causes which, as I have already said, depend for the most part on bad feeding and to premature birth.

Dr. Farr (*"Vital Statistics,"* p. 195) compared the infant mortality in fifteen large towns, from different causes, with the infant mortality in seven textile towns, in London, and in Portsmouth from the same causes.

TABLE LVIII.—*Infant Mortality in Groups of Towns, in London, and Portsmouth.*

Causes of Death, 1873-75.	Fifteen Towns.	Seven Textile Towns.	Portsmouth.	London.
All causes	185·3	194·0	145·9	159·1
Eleven subjoined causes	159·5	167·5	130·9	135·6
Measles	2·9	3·2	2·8	3·1
Scarlet fever	1·8	1·6	0·3	1·1
Whooping cough	6·7	6·4	5·3	8·3
Teething	3·0	3·2	3·0	3·6
Diarrhœa	29·3	31·9	32·2	20·4
Convulsions	26·9	27·4	21·5	18·5
Lung diseases.....	29·3	28·1	24·2	31·9
Tubercular diseases	10·4	10·5	11·7	13·8
Atrophy and debility	34·8	40·9	22·7	20·5
Premature birth	12·4	13·8	6·1	10·4
Suffocation	2·0	0·5	1·1	4·0

The number of women employed in industrial occupations in London and in Portsmouth is insignificant compared with the number not so employed.

Taking together the deaths from convulsions, diarrhoea, atrophy, and premature birth, it is seen that in London they amount to 69·8, in Portsmouth to 82·5, in the fifteen towns to 103·4, and in the seven textile towns to 114. These causes of death—at least the excess in them—must be attributed to the employment of women. The care of the babies is entrusted to others—they are fed artificially almost from birth. A case in point came under my personal observation this week (15th April), in which the mother returned to her work on the fourteenth day after her confinement, and fourteen days later the child was brought to the hospital suffering from gastric derangement due to improper feeding. The children of women engaged in industrial occupations suffer from the effects of maternal neglect. They are handicapped from the moment of birth in their struggle for existence, and have to contend not only against the inevitable perils of infancy, but also against perils due to their neglect by their mothers, and to the ignorance of those to whose care they are entrusted.

3. The next social condition which requires our consideration is IGNORANCE AND NEGLECT.

Ignorance and neglect are almost synonymous when applied to a most important peril of infant life. They are very closely associated, and for that reason we consider them together.

I have already pointed out the great influence of diseases, primarily referable to bad feeding, on infant mortality. Especially have I called attention to this factor in the ætiology of diarrhoea. I have just shown that an excessive mortality from such causes is demonstrable where women are largely employed in industrial occupations, and I have alluded to the diminution in infant mortality when women suckle their offspring in times of industrial stagnation. It cannot be too strongly emphasised that children die because they are badly fed.

The causes of this bad feeding depend (1) upon a growing disinclination to rear infants on the breast—the disinclination is noticeable in all classes of society. The dignity and duties of maternity are sacrificed to the dictates and demands of social enjoyments, or are set aside by the necessity of industrial occupation; whatever be the cause of this abrogation, it tends to the neglect of the child. It has been estimated that at least 50 per cent. of the deaths of infants are directly or indirectly due to bad feeding. If we examine the statistics of infant mortality in the different European States, the close dependence of feeding and mortality on each other is very clearly shown. The lowest mortality (10—13 per cent.) is in Sweden and Norway, where almost every child is nursed by its own mother. In Wurtemberg on the other hand only 33 per cent. of infants are

brought up on the breast. The mortality of the breast fed children was 13·5 per cent., while that of the artificially fed rose to 42·7 per cent. In Lower Bavaria the infant mortality reached the extraordinarily high proportion of 50 per cent. There maternal nursing has become the exception. In Munich the mortality of breast fed children is 15 per cent., that of children artificially reared is 85 per cent. In Berlin, according to the last estimate, only 30 per cent. of the children are fed naturally. The infant mortality is 30 per cent. ("Domestic Hygiene of the child." Uffelmann, Trans., p. 54). The same truth is shown by Dr. Hope's evidence previously referred to, and by the statistics collected by myself. It is therefore obvious that infant feeding exercises an enormous influence on infant mortality.

(2.) The second cause of bad feeding depends upon ignorance. The artificial rearing of children makes the influence of bad feeding more noticeable. Putting on one side the large number of infants who receive some breast milk, but who also receive artificial food, we shall direct attention to infants entirely reared by artificial means. In these cases ignorance has full play. The successful rearing of infants on artificial foods depends not only upon a sound knowledge of the kind of food suitable for infant feeding, but also upon a practical knowledge of its preparation; of the quantity to be administered, of the intervals which ought to elapse between successive feedings; and excessive cleanliness in the most minute details is imperative for success. Artificially fed children die even yet under the most careful supervision more frequently than breast fed children. Between 1861 and 1870 the rate of mortality at the foundling hospital was 159—the average age of the children on admission was 4 months—so that the rate of mortality was very high. Better results are possible to-day with an increased knowledge and greater resources. Those of us who see day by day large numbers of the children of the industrial classes in hospital and at their homes, cannot avoid the conclusion that the most frequent causes of the illnesses attributable to bad feeding is ignorance. Infants are fed on "anything that is going." Any liquid preparation is poured into a bottle, and the child is fed thereon. The class of food stuffs chosen is utterly inappropriate for infant feeding—this is a matter of common knowledge, and need not be further insisted upon. The children suffer and die. They are the victims of ignorance. In Preston during one year (1861) the upper class mortality (0—5 years) was 18 per thousand, of the middle class 36—37 per thousand, and of the industrial or insuring class 62—64 per thousand. This great difference can only depend upon the greater care and attention (founded upon better knowledge and greater sense of responsibility) which the children of

the upper classes receive.⁴ The alternative of wet nursing does not need serious consideration. It can only be very partially applicable. The child of the wet nurse if living must suffer. Her child is usually illegitimate, and without attaching undue importance to the suggestion that the practice of wet nursing acts as an encouragement to illegitimacy, the result to the nursed child is not so generally satisfactory as to justify its adoption except in very exceptional cases. I might remark *en passant* that the dangers of artificial feeding are greatest at three periods of infant life: (1) during the earliest weeks of life, when experiments are being made as to the kinds of food most suitable to the infant; (2) at the period of dentition, when additional food is required; and (3) at the time of weaning, when the food is changed. Nor must it be forgotten that the growth and development of the child depends upon proper feeding. The statistics compiled by Dr. Routh, and included in his work on infant feeding, thirty years ago, are very significant, and show the far-reaching influence of early environment.

It is impossible to separate ignorance from neglect, the one merges into the other; neglect often depends upon ignorance, but often enough the cause of ignorance depends upon the neglect to acquire knowledge. Although the ignorance which we are now considering is ignorance of the care and management of children, and of the elements of household management and domestic economy, the only statistical measure we can apply is the rate of illiteracy. Criminals and drunkards are notoriously ill educated. In Liverpool during 1892 the state of education amongst those charged with offences is given below in percentages:—

TABLE LIX.—*Educational Condition of Liverpool Police Cases, 1892.*

	Read and Write Well.	Read and Write Imperfectly.	Read only.	Unable to Read or Write.
Summary offences	0·5	59·2	8·5	31·6
Indictable „	3·4	61·7	9·0	25·6

Excessive infant mortality is chiefly found to exist among the classes in which these offences are most frequent. From the report of the sanitary condition of Boston, United States of America, in 1875, the following table has been taken:—

⁴ Dr. Grimshaw, Registrar-General for Ireland, investigated the influence of social conditions on the rate of mortality of children under 5 years of age in Dublin. He found that among the upper class the mortality was 18·2, among the middle class 59·2, and among the artizan class 72, while the mortality among the residuum reached 116·9. [“Dublin Journal of the Local Sciences,” July, 1889.]

TABLE LX.—*Infant Mortality and Illiteracy.*

State.	Cholera Infantum.	Diarrhœal Death-Rate.	Illiteracy.
Maine	0·29	0·72	21·5
Vermont	0·32	0·92	45·9
New Hampshire.....	0·44	1·00	23·9
Connecticut	0·71	1·19	36·6
Pennsylvania	0·76	1·51	37·4
New York	0·82	1·88	37·3
„ Jersey.....	0·86	1·47	40·8
Rhode Island.....	0·91	1·44	70·4
Massachusetts	1·16	1·93	51·4

By illiteracy is meant the proportion of those at the age of 10 and upwards who are unable to read. It is seen that the death-rate from diarrhœa tended to vary with the rate of illiteracy.

We may therefore conclude that with improved education there would be a diminution in the rate of infant mortality, and we may include defective education among the causes tending to excessive infant mortality.

The influence of ignorance is not confined altogether to the feeding of infants; it extends to their clothing. The sleeveless frocks and the bare legs which are considered almost *de rigueur* in all classes of society directly tend, by the unnecessary exposure occasioned by insufficient covering, to respiratory disease. Children are particularly susceptible to the influence of cold, and need to be warmly clad. More technical knowledge is required to nurse children through an illness, and the want of the most elementary knowledge of the laws of hygiene by the mother results in handicapping the child in its battle with disease. These questions are so intimately bound up with the larger question we are considering that this brief reference to them is necessary.

4. We pass naturally to the consideration of WILFUL NEGLECT AND ILL TREATMENT. The late Dr. Charles West was of opinion that the great mortality in infant life is not due to active criminality, but rather to negligence, and that the amount of criminal destruction was very small indeed compared with the non-criminal destruction. This view is true to-day in my opinion, but evidence of very general neglect has accumulated. It is however most difficult to determine when neglect becomes criminal and when ill treatment becomes active. The statistics of the National Society for the Prevention of Cruelty to Children (whether they be accepted as legal evidence or not) suffice to show how general is the neglect and ill treatment of children. "From 1884, when the Society was established, to 30th September, 1892, it has dealt with 25,349

“ complaints of cruelty; of these 20,443 proved to be true. The cases were classified as under:—

TABLE LXI.—*Cruelty to Children.*

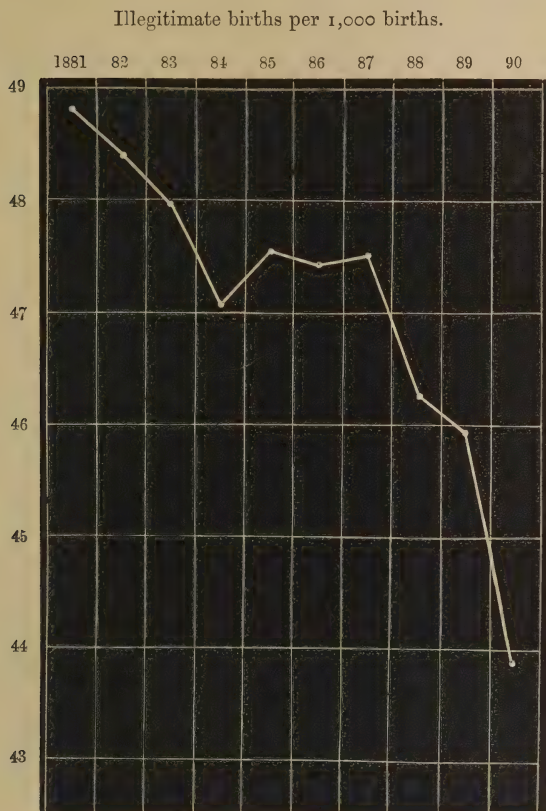
General ill treatment	4,096
Abandonment and exposure	1,733
Assaults	2,374
Neglect and starvation	13,411
Begging	1,699
Immorality	1,141
Other wrongs	895

“ These cases affected the welfare of 56,615 children. The victims were quite young, many of them babies.” It is obvious from these statistics that a vast amount of actual wilful criminal ill treatment prevails. The evidence given before the select committees which considered friendly societies and child insurance has been, in my opinion, very generally misunderstood. It showed without any doubt that a very serious neglect of child life prevailed, and prevailed extensively. It failed, however, as I shall subsequently show, to connect the prevalence of this neglect with any system of insurance. The neglect can only be explained by the indifference with which sacrifice of child life is regarded. The children are a burden, they are “in the way.” They are persistently neglected, not infrequently ill used, and if they should happen to die, the inevitable is accepted with becoming resignation. At the same time it must be understood that this general neglect prevails only among a comparatively small proportion of the working classes, among the dissolute, intemperate, and criminal.

5. The last factor for consideration is ILLEGITIMACY. It is seen that the number of illegitimate births is relatively so small, that the effect of the known high rate of mortality among illegitimate children is comparatively trivial. Moreover, illegitimacy is diminishing in England and Wales, as the following figures show:—

TABLE LXII.—*Births, England and Wales, 1881-90.*

Year.	Total.	Illegitimate.	Birth-Rate.	Illegitimate Birth-Rate.	Illegitimate per 1,000 Births.
1881	883,642	43,120	33·9	1·7	48·8
'82	889,014	43,155	33·7	1·6	48·4
'83	890,722	42,646	33·3	1·6	47·9
'84	906,750	42,667	33·4	1·6	47·1
'85	894,270	42,793	32·5	1·56	47·6
'86	903,866	42,838	32·4	1·5	47·4
'87	886,331	42,134	31·4	1·5	47·5
'88	879,858	40,730	30·6	1·4	46·3
'89	885,944	40,627	30·5	1·4	45·9
'90	869,937	38,142	30·2	1·3	43·7



It is seen that not only is the absolute number of illegitimate births diminishing, but the number relatively to the total number of births is also less. The general birth-rate fell from 33.9 in 1881, to 30.2 in 1890. If the proportion of illegitimate births had fallen only in the same ratio, the rate for 1890 would have been 1.5. The actual rate for 1890 was 1.3.

The excessive mortality among illegitimate children is shown in Table LXIII, taken from Dr. Farr's "Vital Statistics."

In Sheffield it is seen that three-fifths of all the illegitimate children died in infancy. In considering the high rate of mortality among illegitimate children, it must be remembered that a larger proportion of illegitimate children are first births than of legitimate children. Out of 361 illegitimate births of which statistics are available, 65 per cent. were first children, 21.94 per cent. were second children, 11.67 per cent. were third children, 1.11 per cent. fourth, and 0.28 per cent. were fifth children.

TABLE LXIII.

Town.	Illegitimate Births per 1,000 Births.	Death-Rate, all Infants.	Legitimate Births Death-Rate.	Illegitimate Births Death-Rate.
Liverpool	44	214	205	418
Leicester	44	245	239	386
Nottingham	65	202	191	365
Glasgow	85	163	152	286
Helmsley	133	87	75	184
Salford	44	179	171	366
Radford	54	204	187	547
Driffield	116	206	168	596
Routh	89	107	106	118
Twelve districts with low infant mortality }	77	107	97	388
Twelve districts with high infant mortality }	61	203	192	366

Many of the mothers are very young ; not infrequently attempts at abortion have been made during early pregnancy ; during pregnancy much mental worry and anxiety have been experienced by the mothers. The mothers receive but little attention at their confinements. All these factors tend inevitably to excessive mortality. They are ante-natal causes of excessive mortality of illegitimate infants, and are not truly perils of infant life.

After birth other causes operate. Illegitimate children are very often put out to nurse. The rate of mortality among illegitimate children nursed by their own mothers—for example those detained in workhouses for a period after their confinements—does not vary appreciably from the general rate of mortality for all England. Nurse children will be considered separately. Another factor is exposure. The majority of foundlings are illegitimate. The majority of illegitimate children are among the poorer sections of the community. Many foundlings are dead. The number of still-born children is unduly high. The wish to get rid of the infant at its birth acts as an incentive powerful enough either to cause the infant to be still-born, or else to cause it to die by exposure and neglect soon after its birth—by abandonment in a large number of cases.

I have heard it stated on good authority, that in the practice of certain midwives the number of still births is very high, and that this fact is well known among their *clientèle*.

The following inquest statistics are very significant:—

TABLE LXIV.—*Inquests.*⁵

Total inquests, legitimate children	....	0—1 year	2,728	1—7 years	2,712
„ illegitimate	„	0—1 „	1,251	1—7 „	193

that is to say, that inquests on illegitimate children under 1 year of age amount to 31 per cent. of all the inquests held on infants. Yet illegitimate children form less than 5 per cent. of the total number of births. The figures for Liverpool show a similar result—

TABLE LXV.—*Liverpool Inquests.*

Total inquests, legitimate children	.....	0—1 year	165	1—7 years	68
„ illegitimate	„	0—1 „	21	1—7 „	1

Illegitimate children were the subjects of 11 per cent. of all inquests, but the rate of illegitimacy in Liverpool is only 4 per cent. of births.

The fewness of the inquests on children over 1 year of age is noteworthy. The figures however are less likely to be accurate than in the case of younger children. It is obvious, however, that comparatively few illegitimate children survive the perils of infancy.

It may therefore be fairly concluded that (owing to the large number of inquests held on illegitimate children) the excessive mortality among them is in a large measure preventable. It depends chiefly on neglect, frequently wilful and criminal, to which the very existence of the child is a strong incentive. The excessive mortality of illegitimate children may shortly be traced to the following causes: to the shame and poverty of the mother, and the miserable character of the home; to the absence of support from the putative father, and the limited means of sustenance; to inducement, improper food, the indiscriminate use of opiates, and to the indifference of the nurse. As long as women who bear illegitimate children are looked upon with reproach and as unclean by their self-considered more virtuous sisters (who often enough have never fallen because they have never been tempted), as long as the father is not liable to social ostracism, and hence self-restraint is less obligatory in the male sex, so long will the inducement to neglect and the incentive to neglect and crime continue. The subsequent marriage of father and mother ought to legitimise the children as is the case in Scotland. Facilities should also be given for the affiliation of the child before birth;

⁵ Statistics of E. Lankester, M.D., F.R.S. See Report, 1871, "Protection of "Infant Life," p. 141. Q.—3011.

but a very practical difficulty is the impossibility of the enforcement of affiliation orders in the very cases where such enforcement is most necessary. Criminal neglect may be somewhat diminished by improved and increased measures of supervision. The detention of mothers in workhouses for a lengthy period would be regarded as a needless interference with the liberty of the subject.

Much of this neglect occurs in the practice of baby farmers. The Infant Life Protection Act of 1872 did much to remedy the large amount of criminal neglect then existing, but baby farming still continues on a large scale, and the mortality among children so nursed is still enormous. Occasionally criminal proceedings are taken against the nurses. It is unnecessary to quote the evidence given in proof of this great neglect before the select committee of the House of Commons on the Infant Life Protection Act of 1890. The facilities which a well organised system of baby farming affords to get rid of a child; the frequency (amounting in many cases almost to a certainty) with which children are neglected by those to whom they are entrusted, need to be dealt with firmly and finally.

Two other factors tending to high infant mortality have still to be considered—the influence of heredity, and the frequency of developmental diseases.

These form a distinct class of perils different from those we have hitherto considered. They affect the child before birth, and are therefore not strictly perils of infant life.

First as to HEREDITY. It is well known that a tendency or predisposition to certain diseases is inherited, but with the exception of certain zymotic diseases, no disease affects a child before birth. Instances of predisposition may be cited, *e.g.*, gout, rheumatism, and tuberculosis. By the union of individuals having predisposition to the same diseases, the predisposition of the offspring to such diseases is intensified. For this reason if there be any constitutional taint, consanguineous marriages, always to be deplored, ought in those cases to be prohibited. As a preventable form of hereditary predisposition, the neurotic diathesis of children born of alcoholic parentage may be cited.

Any legislative interference however with freedom of marriage beyond the general conscience of the community, will be followed by an intensification of the very evil proposed to be prevented.

The influence of syphilis requires a brief consideration. Fournier, writing in 1885 on the depopulation of France, says syphilis destroys 68 per cent. of infants born of syphilitic parents. Le Pileur, writing from the observation of cases in prison, 1881-85, states that of 643 cases of syphilis, 130 were suitable for analysis. Of these 60 contracted syphilis after having had children, 52 con-

tracted syphilis before having had children, 18 had children before and after. The 60 women had 166 pregnancies, 72 live born children dying soon, 8 still births, 86 surviving children. The 52 women had 122 pregnancies, 93 still births, 22 live born children soon dying, 7 surviving children. The 18 women had no abortions before contracting syphilis, no still births, 27 live born children dying soon, and 16 surviving children. After infection they had 21 abortions, 6 still births, 3 live born children dying soon, and 1 surviving child.

From these and other facts he concluded that in France 14 per cent. of pregnant women are syphilitic; 7 per cent. of children conceived by syphilitic women will survive the dangers of foetal and early infant life. Of 100 conceptions, 13 perish solely from syphilis in the mother.

The gravity of the influence of syphilis thus revealed has not been realised. Apart from any question of abstract morality, the benefit of stamping out syphilis for the saving of infant life is obvious.

The number of deaths of infants registered from syphilis during the decade 1881-90 was as under :—

TABLE LXVI.

Year.	Number.	Year.	Number.
1881.....	1,540	1886	1,701
'82.....	1,666	'87	1,584
'83.....	1,773	'88	1,952
'84.....	1,733	'89	1,500
'85.....	1,652	'90	1,483
1881-90	16,584 = 1·8 per thousand births.		

The second factor is DEVELOPMENTAL DISEASE AND PREMATURE BIRTH.

Deaths from these causes can scarcely be regarded as due to perils of infant life, as they are due to prenatal influences. These deaths are however very numerous, amounting to 2 per cent. of births. They all occur in infancy or during early childhood. It is a matter of regret that still births are not registered in England. It has been estimated that the number of still births is as high as 6 per cent. of the total births. Apart from the statistical value of such registration, it would tend to check the procuring of abortion, foeticide, and child murder, by preventing the burial of any still born infant unless full particulars of the birth were furnished to the district registrar. It would also be possible to investigate the causes of still birth more accurately; for example, the real influence of syphilis would be measured.

From the following table it will be seen that there has been an almost continuous increase in the deaths from developmental diseases during the past thirty years. Careful consideration has only resulted in the partial explanation of the increase. It must be remembered that the rate of infant mortality from all causes has not only *not* increased, but has actually diminished. It has therefore been suggested that the increase in the deaths registered from developmental diseases is due to the transference of deaths from one alleged cause to another :—

TABLE LXVII.—*Premature Births and Congenital Malformations.*

Year.	Premature Births.	Congenital Malformations.	Year.	Premature Births.	Congenital Malformations.
1861-65....	11.19	1.76	1876-80....	13.38	2.39
'66-70....	11.50	1.84	'81-85....	14.17	3.23
'71-75....	12.60	1.85	'86-90....	16.14	—

TABLE LXVIII.—*Premature Births and Congenital Malformations.*

Year.	Premature Births.	Congenital Malformations.	Year.	Premature Births.	Congenital Malformations.
1881	13.63	3.20	1886	15.09	3.33
'82	13.99	3.31	'87	15.89	3.29
'83	14.41	3.08	'88	15.98	3.45
'84	14.42	3.15	'89	16.29	—
'85	14.43	3.41	'90	17.48	—

The steady and continuous increase year by year seems to prove the insufficiency of this explanation, and it does not account for the great differences in the deaths from these causes in different districts. Perhaps more live births are registered. Births which would previously have escaped registration, and have been termed still births, are included in the statistics. But this would also tend to increase the rate of infant mortality.

The increasing employment of women in industrial occupations has been suggested as an explanation. We have already considered the influence of this factor on the general rate of mortality, and have seen that it was associated with a high death-rate, ascribed to premature birth.

A third explanation associates together death from premature birth with the number of marriages of minors ; but taking a series of years it is seen that such marriages are not increasing in numbers. The influence of these marriages has been considered in so far as it relates to the general rate of mortality. Körösi, from observations at Buda Pesth, states that early marriages

conduce to high infant mortality. He further says that the children who survive are not strong, and that inexperience of the mothers is an important factor in the causation of the excessive infant mortality.

TABLE LXIX.—*Marriages of Minors per 1,000 Marriages.*

Year.	Males.	Females.	Year.	Males.	Females.
1861-65....	65·6	198·8	1876-80....	77·8	217
'66-70....	71·0	208·4	'81-85....	73·0	215
'71-75....	81·6	223·4	'86-90....	—	—

If the two explanations last suggested be considered together, the association between a high rate of infant mortality from developmental diseases and the occupation and health of the mother is confirmed.

Between 1881 and 1890, 162,209 deaths from developmental diseases were registered, equivalent to 18·27 per thousand births. In 1889 99 per cent. of these deaths occurred in infancy. They are slightly more numerous in males than in females. It would be interesting to know what proportion occurs in first born children.

TABLE LXX.—*Deaths from Developmental Diseases, 1889.*

Sex.	1-3 Months.	3-6 Months.	6-12 Months.
Males	9,418	198	78
Females	7,337	171	73

The ADMINISTRATION OF OPIATES requires brief reference.

Depending partly upon the employment of women in industrial occupations, is the general administration of opiates to infants and very young children. The extent of this was revealed during the consideration of the Infant Life Protection Act of 1872, and there is reason to believe, from inquiries which I have made myself, that the practice is still very general. I do not mean to imply that the habit is confined to operatives. It is also notoriously prevalent among baby farmers, and it is not infrequent among the general public.

Occasionally an over dose is administered. Passing notice is taken of the practice. The incident is soon forgotten, and the habit is allowed to continue without any vigorous effort to suppress it. Numerous deaths ought in reality to be attributed to this custom. The child does not thrive. It dies either from chronic infantile atrophy, or else from a more acute attack of gastric disease. Proof of administration is generally absent. In towns the favourite form of administration is as a soothing syrup, but

frequently laudanum itself is given. Paregoric of less than standard strength is often extensively retailed by grocers.

During a recent visit to a colliery village in North Wales, I learnt that three quarts of laudanum were sold in one week at one shop to the villagers. It was, so I was informed, in general use by the colliers and their wives—especially by the latter. No “soothing syrup” was ever asked for.

This information was confirmed by the leading chemist of the neighbouring town. The laudanum was frequently given to infants. The dose was carefully regulated, and “no accident” ever occurred. The mother before leaving home for work placed a lump of sugar in the bottom of a small teacup, and added one, two, three, four, or five drops of laudanum, according to the age and previous habits of the child; she then added a teaspoonful of boiling water. This punch (as the mixture is locally called) was administered to the child, who slept till the mother returned. The attention of the British Medical Association has been directed to this custom, and steps are being taken to render the law as to the sale of opiates more stringent. The sale of soothing syrups containing narcotics, the general sale of paregoric and laudanum, require to be restricted. The drugs ought to be properly labelled, and they ought to be of standard strength.

Lastly we have to consider the influence of CHILD INSURANCE.

The idea that child insurance is directly responsible for much of the waste of child life is very prevalent. For the last half century child insurance, either in the form of burial insurance or of life insurance, has been in existence; originating in Liverpool and other towns where high infant mortality prevailed. For the past twenty years it has been alleged that this child insurance tends to excessive infantile mortality,⁶ for in 1871, Mr. Curgenvin, giving evidence before the Select Committee on the Bill for the Protection of Infant Life, stated his belief that “children insured in burial clubs die in a much larger proportion than children not so insured;” other witnesses were of a like opinion. The committee merely stated in its report that it had been suggested to them “that no infant or very young person should be entered in a burial club, or become the subject of life insurance.”

The report of the Royal Commission on friendly societies in 1874, expressed the opinion that “infant life assurance if badly administered was mischievous” (a fact which no one would venture to question), and added, “that if well administered it was not harmful but beneficial.”

⁶ The statistics of the Prudential Assurance Company show that the mortality (0—1 year) among the insured is less than the general mortality among infants—even if the deaths which occur during the first month of life are eliminated.

In consequence of this report, the Statute of George III which prohibited the insurance of the life of another in which there was no insurable interest, was repealed in so far as children under the age of 10 years are concerned, but the amount was limited to 6*l.* under the age of 5 years, and to 10*l.* for children over 5 and under 10 years of age. Burial insurance thus became life insurance, and the burial clubs (with which so much that was objectionable was associated) were suppressed. It must be remembered that the insurance of the life of another is valid under the common law where there is an insurable interest, and much of the misunderstanding in reference to child insurance and its result depends directly upon forgetfulness of this fact.

In 1889 the committee on friendly societies stated in their report that evidence was tendered to show not only that infant insurance acts as an incentive to crime, but also that a widespread system exists under which much neglect, cruelty, and crime take place with impunity. They reject the statistical evidence in regard to child insurance, owing to the impossibility of drawing therefrom a safe conclusion. They admit that insurance for burial expenses is highly valued by the working classes for perfectly legitimate reasons, and that an unnecessary hardship would be inflicted on them if it were prohibited. "The question 'is whether the defenceless state of the children of the poorer 'classes is such as to make it imperative that this system of 'insurance should be prohibited or more stringently guarded.'" Although numerous suggestions for the amendment of the existing law were offered, the committee contented themselves with recommending that the age for juvenile assurance should be extended to 16 years, and that the total sum insured for on death under the age of 5 years should be diminished to 4*l.* They also urged the addition to the certificate of death of a column for particulars of insurance.

In 1890 a Committee of the House of Lords considered the Children's Life Insurance Bill, introduced by the Bishop of Peterborough, but admittedly drafted by the Rev. Benjamin Waugh, the honorary director of the National Society for the Prevention of Cruelty to Children. The Bill was eventually withdrawn. The evidence given by several witnesses, including medical men, coroners, and two judges of the high court, was very conflicting, and convincing evidence of specific cases of child murder *by parents* for the sake of insurance money was wanting. A strong belief was expressed that insurance is an incentive to crime, inasmuch as it familiarises the parent or guardian with the prospect of pecuniary benefit on the death of the child insured. But this belief, be it well or ill founded, seemed to be grounded

upon surmise, hearsay, or general impression. Even where specific cases were adduced, the insurance could have been effected under the ordinary law, because it was an insurance coupled with an interest.

Mr. Justice Wills admitted that the vast majority of insurances were attended with no mischief to the child, and that it was only the residuum that needed consideration. He was opposed to the prohibition of child insurance, and thought it would be a mistake. Mr. Justice Day was opposed to infant insurance even if it were proved that it never tempted parents to commit crime.

I have briefly reviewed the more important evidence existing on the subject. I have weighed, as carefully as I am able, all the information I have gathered. I have discussed the subject with medical men resident in districts where insurance prevails extensively, and my own conclusion is that the evils of child insurance have been unnecessarily exaggerated, and that the deaths of the children commonly attributed to insurance, ought really to be ascribed to the causes we have been considering in the earlier part of this essay. The incentive to child neglect and child murder is not the prospective receipt of insurance money. Neglect and crime would continue even if insurance were abolished straightway. High infant mortality depends upon the light estimation in which child life is held, and the careless indifference with which it is treated. Cases of neglect are more frequent into which the element of insurance does not enter, than those upon which it is supposed to exercise influence.

The Rev. B. Waugh estimated that over 1,000 children die, or are made to die, every year for the sake of the insurance money. He estimates that 33 per cent. of the children of the industrial classes are insured.

From statistics supplied by the manager of the Prudential Assurance Company, and arranged by Captain Marshall in the "Fortnightly Review" for December, 1890, it appears that 80 per cent. of such children are insured. Probably the truth lies between these two estimates. Child insurance is much more general in towns than in the country, and, as we should naturally expect, it is more prevalent where a high rate of infant mortality prevails than where infant life is comparatively secure.

Inquest statistics show that about 50 per cent. of children are insured. Dr. Hope, in the investigation at Liverpool previously referred to, found that nearly 64 per cent. were insured. So that it is probable that Mr. Waugh is guilty of as much under estimation as Captain Marshall is of over estimation. My own records (though as yet too few to give any reliable estimate) show,

however, that among hospital patients Captain Marshall's figure is not too high.

It is obvious, however, that child insurance is very general, and it follows that the influence of a small number of deaths directly caused for the sake of the insurance money, would not affect to any appreciable extent the general mortality statistics. It is therefore impossible to make any use of them to estimate the influence of insurance. The only available means of estimating the influence of insurance is the number of proved cases of infanticide for the sake of the insurance money. Such instances in people who are permitted by the Act to insure are comparatively few in number. The report of the 1889 committee states merely that the allegations of culpable and even wilful neglect and violence have been, in some case, well founded, and that the object of such neglect and violence has not been disconnected with the sums payable on the death of the children. This, it will be noticed, is an extremely cautious statement.

Under the Friendly Societies Act, 1875, no insurance money may be paid on a child's death except to the parent or the personal representative of such parent. The great majority of the cases remaining after deducting those in which insurance was permissible under the common law, have occurred owing to the loose interpretation placed upon the words "personal representative" by those who are called upon to comply with the Act. Evidence from this source is therefore wanting.

To sum up. I repeat that in my opinion child insurance has been accorded an importance far beyond its merits. The same amount of energy directed to the suppression of an obviously preventable form of death, *e.g.*, suffocation in bed, might result in a greater saving of child life than would result from the total suppression of insurance. It would be as rational to interdict fire insurance because of a few cases of arson, as to prohibit child insurance because of a few cases of proved infanticide.

If the inducement offered by the small sum received from insurance on the death of a child is sufficient to determine infanticide, it is overwhelming evidence of the light estimation in which child life is held. The proper remedy therefore is not the suppression of insurance, but the raising of the estimation in which child life is held.

I am of opinion that the lower scale of payments adopted by the 1889 committee might fairly be accepted, and that a system of child insurance registration should be tried by the local authorities as a temporary and tentative measure. By such a register accurate information as to the influence of child insurance would be obtained, and its future definitely determined.

Payment to the undertaker is objectionable. Medical supervision is impracticable. I had formulated a scheme by which children before insurance were to be seen by the parish medical officer at a uniform fee of 1s., but it would not be possible to carry the scheme into execution.

It would be impossible to replace the present system of collecting societies by any State system of child insurance without collectors. The evil of the present system depends, according to its opponents, upon the touting by rival collectors; but a non-collecting society, founded in Liverpool by the late Mr. Robertson Gladstone, has only met with a very partial measure of success.

The ideal insurance system would be an endowment system. The life of the child, not its death, would become the source of profit.

Summing up the causes of excessive infant mortality, and therefore (as I have shown) the perils of infant life, we find them to depend upon:—

(1.) Pre-natal causes leading to death from premature birth, from congenital malformation, and from hereditary diseases.

(2.) Sanitary conditions, insanitation leading to excessive mortality from zymotics and diseases of the respiratory system.

(3.) Social circumstances, *e.g.*, ignorance, occupation, &c., leading to the neglect of children, and consequent excessive mortality from diarrhoea, convulsions, and atrophy.

(4.) Crime and wilful neglect.

During the composition of this paper I have taken the opportunity of calling the attention of all sorts and conditions of men (and of women) to the awful sacrifice of child life which prevails. The reply has invariably been to this effect: "Poor things, they 'are happier dead.'" This carelessness is lamentable, for it ignores one reality; for every child who dies, there are many who survive, stunted in growth, dwarfed in development, and crippled. We can measure the loss of children by death; we cannot estimate the influence upon the nation of the weak damaged children who survive. An inquiry into the previous history of prostitutes in Russia, revealed the curious fact that in a large proportion of cases they were the offspring of degenerate parents, of parents addicted to intemperance, or of parents with constitutional disease (*e.g.*, tuberculosis).

The difference in the physique of children born and reared in towns and of children born and reared in the country is very marked. It would be of great interest to follow out at length the influence of the aggregation of population in large centres on the growth and development of the human body. The increase which has been noticed in recent years in the number of short sighted

people has been attributed to the want of exercise of the eye for distant vision by the residents in our large towns. The influence of daily confinement in schools, and afterwards in offices badly ventilated, badly lighted, and badly appointed, must be great. It is of interest to note that the death-rate at school ages from nervous diseases has not diminished, while the death-rate from other causes is less during the last decade. And in other directions the influence of town life may be traced.

The most difficult part of the problem we are considering is the treatment of the ills we have discovered; what means can be suggested by which a diminution of these evils may be attained?

Idealists who depict imaginary communities free from all the vices and defects of actual life, lose sight of one most important factor. They do not remember that there is an immense amount of cruelty and wickedness in human nature which is only kept under, even in the most highly developed races, by the strong arm of coercion. Every reform which has ever been made has necessitated a new creation of officials, whose duty it is to enforce certain essential wholesome regulations. Behind religion, morality, education, cleanliness, we always see the policeman, who punishes the wrong doer; his duties are always tending to grow.

Whatever may be suggested as a remedy for the ills we have been considering, will inevitably necessitate fresh pains and penalties, as well as authority to enforce them. Some writers are consequently led to advocate the treatment of the most glaring evils only, and to consider that the deep seated causes are beyond human aid. But this paper would be in no wise complete if it did not make some attempt to consider the ultimate basis of infant perils, even though preventive measures cannot be suggested which would effect a radical cure.

In the most general sense it may be said that in a civilised race infant perils are caused by poverty. Into the still wider question of how far poverty is due to individual characteristics I do not propose to enter. The poverty to which I allude is national, not individual poverty, and it is, I think, in some degree independent of individual characteristics.

It must not be forgotten that a great accumulation of wealth in a few hands is always accompanied by a corresponding amount of pauperism and want spread over a large number of people. So that while England is the richest country in the world, its wealth is a measure of its poverty—which is more widespread and more hopeless than anywhere else.

This condition is owing to the peculiar position into which we have drifted in our social arrangements.

The natural end of man's existence is to cultivate the ground. Although some are set apart for other duties as soon as the progress of civilisation demands division of labour, there must always be some who produce from the ground an equivalent.

At the present time we, in England, are in the abnormal position of ceasing more and more to cultivate the ground, and of spending all our energies in producing articles of which it is becoming more and more difficult to dispose.

When machinery first became applied to all kinds of manufactures, England obtained a practical monopoly, and for a time supplied the world with machine-made goods. The demand for labour to direct and assist this machinery caused the owners of machinery to offer wages which tempted the field labourers to take to the new work, and so began that steady migration from the fields to the towns, which has been the great economical feature of this century.

We cannot shut our eyes to the fact that our monopoly is at an end, and that the demand for machine goods is becoming less and less. The goods are produced on so vast a scale that employment has become intermittent. Periods of active production are followed by periods of stagnation, during which the surplus machine products are being worked off. This uncertainty of employment has had much to do with the absence of thrift (which is greatly to be deplored) among the working classes.

It is impossible to formulate any scheme to cause the people to return to agriculture. Even supposing that by peasant proprietorship, allotments, or any one or the other devices which have been suggested, they were brought back to the land, the next period of commercial prosperity, with its high wages, would inevitably tempt them back to the towns again. The development of civilisation connotes growth of luxury. A return to the simple primitive habits of our ancestors is a dream that can never be realised.

Therefore although I think that many of the social evils which I have alluded to would vanish if the bulk of the population returned to agriculture, I do not consider it worth while to discuss this solution further—it is impossible. I accept large towns as inevitable. I shall therefore confine myself to the methods of treating some of the worst features of town existence in so far as they affect infant life.

A few words first, however, in reference to individual poverty. Considerable attention has been given lately to the unemployed. Labour bureaux have been organised. Harebrained schemes have been originated by philanthropists and paid agitators to provide work for everybody "at fair wages for a fair day's work." The temporary utility of such schemes has been already indicated in

the general discussion. There has, however, been one practical gain from the attempt made. It has been demonstrated that many of the unemployed are naturally incapable of continuous steady work. Whether from constitutional idleness or from intemperance, the honest, sympathetic help extended to many of them has been wasted. The majority have been found not to retain the employment given. In many cases poverty is due to individual not to national causes.

Aggregation in towns has hitherto always implied overcrowding, and the measures which have been adopted to combat this evil have not been in the right direction. I have discussed the question of the influence upon health of the blocks of model dwellings with the assistance of the statistics afforded by block dwellings in London, and have stated my belief that the immense outlay of money involved in their construction has not been justified by the result. The remedy has not gone to the root of the evil. It has not diminished overcrowding. On the contrary, it has increased it. The only good achieved has been obtained by regulating it. The risk of zymotic diseases is increased. It is inevitable that under any system of close aggregation, however carefully regulated, filth diseases, whether from the fouling of soil, air, or water will continue. Another factor has been introduced into our social system, which suggests a more practical and radical solution of the problem. Of late years the great development of our railway system, enclosing our towns by a rapidly growing network of railways, offers means of transport from one point to another within a reasonable time. No system of travelling is so cheap. There is now nothing to prevent workmen and others from living in the healthy open outskirts of our towns, which have hitherto been the exclusive dwelling places of the wealthier classes. Bills recently introduced into Parliament have shown at what small cost workmen's trains can be run, 5, 10, or even 15 miles. Compulsory legislation in this direction would benefit the whole community. It is not sufficient for us to wait for an enlightened policy to be inaugurated by the railway companies themselves. They are vast bodies with great inertia, with internal selfish interests, slow to move without the application of external forces. It can be readily shown that the plan is feasible. The increased volume of traffic moreover will occur when ordinary traffic is least heavy. The advantages are many and obvious. Even where they do not directly affect infant life, yet by improving the general standard of health, they are certain to react favourably on infant mortality.

One suggestion may be made here. Since indirect taxation is always more readily paid than direct taxation, free railway passes

might be attached to the workmen's dwellings in the suburbs. These passes would be paid for by a charge in the rent remitted by the landlord to the railway company. The objections to residence in the suburbs would thus be largely reduced—the full expense being easily known.

In towns themselves we can only move in the direction of removing the more obvious consequences of overcrowding. Not enough activity is yet shown in demolishing grossly insanitary property. If it be demolished, the method is often bad. A wholesale demolition is made in a particular district. The adjacent property is still further crowded, and this congestion is often long in being relieved. It is true that provision is made in the Acts for adequate accommodation for the ejected tenants, but more efficient enforcement of the provisions is desirable. Vested interests, and the want of adequate independent authority, interfere with the enforcement of existing powers. The appointment of County Medical Officers of Health is being followed by greater attention to the sanitary conditions of rural and urban districts. Improvement is being made, but it needs to be expedited.

In our system of national education some more prominent place should be given to domestic training. It is useless to advocate greater parental responsibility unless we at the same time prepare the children to bear that responsibility. Moral training must be left to our moral teachers: to ministers of religion and to others. Hitherto too much attention has been given by them to matters of faith and religion, to the exclusion of the relations of man to man in the circumstances of every day life. As long as educated people regard the sacrifice of child life with equanimity, as an unmixed blessing, it is useless to expect less educated people to regard it as reprehensible, however different the points of view may be.

It is difficult to dissociate ignorance from responsibility. As I have already shown, half the deaths of infants are attributable to bad feeding. This bad feeding depends upon ignorance.

In rural districts infant mortality is low; this fact cannot be explained by the abundance of fresh air, or by the high standard of general education which obtains there. It can only depend upon the better training of the young girls, who are familiarised from their earliest youth with the care and the management of children. The excessive mortality in towns depends largely upon the want of this knowledge. The highest standards in board schools and other schools might well include sound elementary instruction on this subject: not theoretical instruction as to the percentage of proteids in milk and such like, but practical rules for the feeding and care of infants. I do not depreciate the value

of sound scientific teaching, however elementary, of physiology, but there is a long step between theory and practice. The practice must be taught in the schools, for there is no method afterwards of imparting it, except by the voluntary action of the young girls themselves. The development of technical instruction by the local authorities affords another opportunity of imparting this knowledge. The adoption of domestic training as a subject of technical instruction, and the appointment of well qualified lady teachers to instruct the industrial classes through the medium of mothers' meetings, and of other religious and social assemblies, as well as by well organised special classes, would be a step in the right direction. Some work of this kind is being already attempted; but the teaching is not continuous, and depends upon voluntary aid. House to house visitation would be best of all. This would be however of necessity optional, and depend entirely for its success upon the tact of the lady teachers. A mission field exists neglected and uncultivated as wide and as important as that of India or of China—with only one disadvantage, that it is too near home. The Buckinghamshire County Council has set an example, in this direction. Through the energy and initiation of Dr. De Ath, the County Medical Officer of Health, ladies are being trained as rural health missionaries. Their duties are to lecture in a popular and homely way on the management of personal health, and on the management and care and feeding of infants. Special stress is laid on house to house visitation and industrial teaching. Much tact is required to avoid giving offence—a point humourously and yet pitifully illustrated in a recent copy of "Punch," where an irate mother resents the teaching of the new young doctor as to the management of her children, on the ground that she ought to know all about it, having buried fourteen of her own! This teaching however requires to be very carefully watched—the rural health missionaries must be well and soundly instructed. The work must be undertaken in earnest and devotedly continued. The results will not be seen immediately; time must elapse for the seed which is sown to grow and bring forth fruit. The soil is barren, and the harvest will not be rich.

With regard to the employment of women in industrial occupations, it is to be regretted that the necessity exists for married women to be so employed. The influence of their employment, as I have shown, on their offspring is twofold: the children when they are born are less fitted to enter upon the competition of life, and after they are born the necessity for their mothers to work causes them to be neglected. A woman under the present law may not be employed for a month after her confinement, but this period is not long enough, and it seems impossible, under existing con-

ditions, to prolong it without inflicting much hardship. The mortality among the infants of the female operatives employed in the factory of M. Dolfus, a cotton manufacturer of Mülhouse, was reduced from between 40 and 50 per cent. to about 26 per cent. by the establishment of a maternity fund, to which the married women paid contributions, which were supplemented by M. Dolfus. The women were enabled by this fund to remain away from work for a longer period after their confinements. A grant is made by many friendly societies on the birth of a child to pay for the attendance of a doctor and of a nurse. This principle might easily be further extended, but such a universal obligatory insurance could not be enforced. The establishment of numerous day nurseries, or crèches, conveniently situated in industrial centres, is the only practical remedy, together with the prohibition of the entrusting of infants to ignorant and careless neighbours for hire or reward. In our large towns children are left under the care of older children scarcely bigger than their charge, or are obliged to entrust them to the tender mercies of a complaisant neighbour, more ignorant of babies than the mother herself. Some trust to opiates. Two day nurseries in Liverpool, with an annual attendance of nearly 4,000 children, an average of 44 per day, managed wisely and economically, expended at the rate of nearly 6*d.* per child per day, or about 3*s.* 6*d.* per week. The utmost charge that can be made is 1*s.* a-week, so that 2*s.* 6*d.* a-week per child must be met by donations or subscriptions. It is hardly fair to expect that this deficiency should be defrayed in this way, and in view of the evidence tendered before the Infant Life Protection Act of 1890, by which it was urged that no child ought to be allowed to be received from the custody of its parents for hire unless by a registered person, the establishment by county councils of a widespread system of day nurseries seems desirable. This plan is strongly advocated by many county medical officers of health.

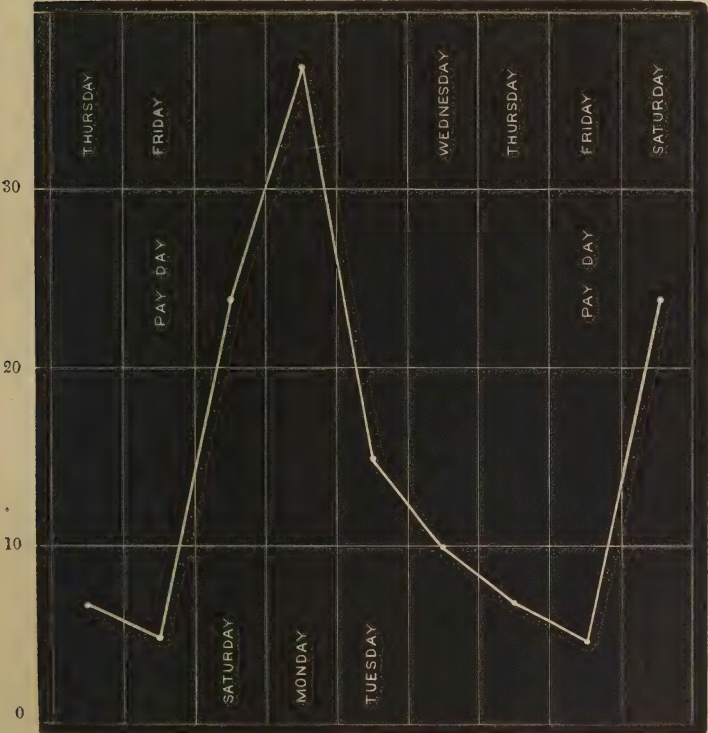
I have already indicated the great influence which intemperance exercises directly on infant mortality, and have referred to the influence it exerts on the wage-earning power of the people. I include here the summary of an investigation made for me by the chief of a large manufactory in Liverpool. The results are really worse than the figures would imply, for by the method of time keeping adopted by the firm, a quarter day lost in the morning would be neutralised by any overtime worked.

TABLE LXXI.—*Analysis of Men Losing a Quarter or a Half Day on the various Days of the Week. Friday Evening being Pay Night.*

[Seventeen men for twenty weeks.]

Saturday	57	Wednesday	25
Monday	89	Thursday	18
Tuesday.....	37	Friday	14

Percentages of men “losing time” on each day of the week.



From inquiries made, the inference that the loss of the “first quarter” is due to the previous night’s dissipation is fully confirmed.

Intemperance, whether regarded as a cause or as a consequence of our social conditions, is directly responsible for much of the poverty, privation, and crime, and for the neglect which leads to the sacrifice of child life. Although there is no necessary relation between the number of public houses and the amount of drunkenness, yet a diminution in the number of public houses is urgently needed. In Liverpool a district (upon which houses for the sale of drink are prohibited by the terms of the leases granted by the

landlord) has a lower death-rate than adjoining districts. The houses are better kept and are better maintained than similar houses in other parts of the city. Licences should be placed under the control of the ratepayers. A maximum number of licensed houses in any area should be fixed by law.

I cannot help believing that early education has most influence of all in preventing the formation of the drink habit. The majority of drunkards begin to drink to excess in early life; some when on the down grade after maturity; comparatively few through failure in business, grief, or poignant emotion during the period of maturity.

Attention requires to be directed to the quality of the beer and spirits retailed, and firm measures ought to be taken for the prevention of the sale of injurious drink. A compulsory modification in the character of the beer would be followed by excellent results.

A few points remain to be mentioned: The question of the Contagious Diseases Acts is too wide to be considered. To the influence of syphilis I have called attention, and any method whereby its frequency could be diminished, involving no further interference with the liberty of the subject than that of the Contagious Diseases Acts, ought to be accepted as necessary and urgent.

The form of death certificates, and the question of death certification, is at present under consideration by Parliament. The majority of uncertificated deaths are deaths of infants. A revision of the form of the death certificate so as to include particulars of insurance, the appointment of medical men as registrars by whom the certificates would be scrutinised, and immediate inquiry made into doubtful or suspicious cases, are desirable. It is impossible under present conditions for any medical man to initiate on his own responsibility an inquiry in cases where unconfirmed suspicion alone exists. Reference to the coroner is cumbrous, unsatisfactory, and often nugatory. Finally, the coroner's inquiry at present held on children found dead, whether foundlings or whether children overlain, ought to result in some more useful and practical result than the usual formal return of a verdict with an occasional censure.

Lastly, the Imperial Parliament has already provided, in the Prevention of Cruelty to Children Act, some means of repressing the graver forms of neglect. These means require to be extended by the provision of punishment for overlying. Administration of opiates should be prohibited: soothing syrups containing narcotics being suppressed. It is to be regretted that the Act is chiefly administered by voluntary societies. Power ought to be entrusted to the local authorities to undertake the duties hitherto performed

by children's protection societies. Private philanthropy, however excellent, ought not to be allowed to undertake public work.

It may be urged that the remedies I have proposed are utterly inadequate to cope with the gravity of the conditions I have been discussing; and the contention is reasonable. But more drastic reforms are either impossible or premature. I have insisted that the preventable forms of child neglect are in the main referable to want of parental responsibility—a condition which, it is certain, largely depends on ignorance. The remedy—the only remedy—in which I have any faith or confidence—is education.

“My people are destroyed for lack of knowledge.” “Knowledge is power, and power implies trust. We who enjoy knowledge are the trustees of power. People are ignorant because they are ignorant, they do not desire knowledge because they have not even the knowledge to know that knowledge is desirable. They are to be pitied and to be helped! By whom are they to be pitied, and by whom are they to be helped, but by those to whom the highest privileges of knowledge are entrusted?”

APPENDIX.

*Analysis of Methods of Feeding Infants.**Five Hundred Consecutive Cases from the Infirmary for Children, Liverpool.*TABLE 1.—*Methods of Feeding.*

Ages.	Breast.	Breast and Food.	Food.	Total.
0— 3 months	54	23	34	111
3— 6 „	38	25	39	102
6—12 „	54	37	60	151
Over 1 year	9	33	94	136
Total.....	155	118	227	500

TABLE 2.—*Percentages. Methods of Feeding.*

Ages.	Breast.	Breast and Food.	Food.
0— 3 months.....	48·7	20·7	30·6
3— 6 „	37·2	24·5	38·3
6—12 „	35·7	24·5	39·8
Over 1 year	6·6	24·2	68·2

TABLE 3.—*Methods of Feeding in relation to Digestive Disorders.*

Ages.	Digestive Disorders.			Other Illnesses.		
	Breast.	Breast and Food.	Food.	Breast.	Breast and Food.	Food.
0— 3 months	21	13	30	33	10	4
3— 6 „	12	14	34	26	11	5
6—12 „	19	24	50	35	13	10
Over 1 year	6	29	78	3	4	16
All cases	58	80	192	97	38	35

TABLE 4.—*Methods of Feeding in relation to Digestive Disorders. Percentages.*

Ages.	Breast.	Breast and Food.	Food.
0— 3 months.....	88·8	56·5	88·2
3— 6 „	31·6	56·0	89·0
6—12 „	35·2	65·0	83·0
Over 1 year	66·6	87·8	83·0
All cases	37·4	68·0	84·5

Note.—The numbers in Table 4 show percentages of children fed on breast, breast and food, or food, who suffer from digestive disorders. It is seen that 60 per cent. of infants were suffering from digestive disorder, and 64 per cent. of all the children examined.

Apprehensions for Drunkenness, Rate of Infant Mortality, Infant Death-Rate from Violence, Marriage-Rate, Birth-Rate.

Town.	Apprehensions per 10,000, 1876.*	Rate of Infant Mortality, 1871-80.	Violence. Infant Death-Rate, 1871-80.	Marriage- Rate, 1871-80.	Birth- Rate, 1871-80.
1. Liverpool	420	217	14·0	29·84	35·08
2. Newcastle-on-Tyne	372	176	4·25	17·27	37·86
3. South Shields.....	330	164	1·94	16·06	43·81
4. Durham	305 {	176 166	} 0·81	{ 18·94 16·85	46·37 45·24
5. Warrington	293	151			41·11
6. Birkenhead.....	283	133	1·12	13·55	37·68
7. Gateshead	283	170	2·29	14·98	44·08
8. Manchester	276 {	190 207	} 2·41	{ 38·49 26·00	38·97 40·78
9. Salford.....	270	184			42·39
10. Tynemouth.....	266	161	1·35	15·37	41·14
11. Newcastle-under-Lyne...	257	147	1·22	13·54	40·27
12. Hartlepool	239	166	1·85	17·67	43·36
13. Chesterfield	237	149	1·42	15·53	44·53
14. Ashton-under-Lyne	234	179	0·96	17·84	37·82
15. Rochdale.....	229	158	0·814	16·94	34·96
16. Wakefield	215	154	1·13	16·43	41·45
17. Great Grimsby	203	152	1·27	16·54	35·34
18. Wigan	196	172	0·81	17·34	45·77
19. Sunderland.....	194	166	1·52	19·31	41·07
20. Newport	172	142	1·58	19·10	38·23
21. Derby	171	146	1·24	22·34	38·60
22. Cardiff.....	159	142	1·12	18·14	35·88
23. Oldham	159	174	0·93	16·62	37·67
24. Lancaster	151	139	1·08	16·17	32·60
25. Halifax	139	157	0·53	18·62	35·10
26. Swansea	138	141	0·594	19·95	41·75
27. Kendal	134	105	1·07	14·02	31·95
28. Hereford.....	133	121	1·45	13·65	28·74
29. Stalybridge.....	131	179	0·96	17·84	37·82
30. Carlisle	130	153	1·09	17·03	32·95
31. Nottingham	122	184	2·11	24·95	32·58
32. Stockport	122	182	1·53	20·25	35·70
33. Shrewsbury	121	140	1·67	14·00	28·18
34. Blackburn	120	191	0·525	17·18	39·30
35. Scarborough	119	160	1·82	17·83	31·57
36. Berwick	118	117	2·30	13·18	30·61
37. Bolton	118	167	0·93	17·33	39·20
38. Hull.....	112	178	1·33	25·17	37·88
39. York.....	111	157	1·61	17·11	32·36
40. Chester	104	131	1·44	16·96	33·04
41. Walsall	103	168	0·65	14·72	42·95
42. Preston	100	212	0·79	17·27	37·86
43. Wolverhampton.....	99	161	1·46	15·86	39·75
44. Huddersfield	93	156	0·48	16·37	34·42
45. Beverley	91	136	1·10	14·13	32·28
46. Doncaster	87	167	1·03	15·05	35·24
47. Macclesfield	87	152	0·75	17·92	32·83
48. Worcester	86	176	1·93	15·08	32·00
49. Birmingham	82	179	10·92	19·66	39·89
50. Leeds	73	188	2·14	23·97	39·33
51. Newark	69	145	1·23	14·41	32·28
52. Carmarthen	63	110	0·36	14·89	30·74
53. Lincoln	62	162	1·04	16·56	34·21
54. Bradford	61	177	1·11	18·08	37·97
55. Kidderminster	57	138	2·87	16·12	33·93
56. Middlesbrough	56	152	1·47	15·39	44·04
57. Sheffield	52	183	1·52	26·30	42·50
58. Congleton	49	145	0·38	13·70	35·31

* From Fourth Report Select Committee (House of Lords) on Intemperance, Appendix, Table i.

Other statistics from Registrar-General's Report, 1871-80.

Deaths in the Ten Years 1871-80, England and Wales.

	All Ages.	Under 1 Year.	1	2	3	4	Total under 5.
Annual death-rate per } 1,000	21.27	177	65.9	27.7	18.0	12.5	63.12
Mean population, 1871-81	24,343,348	720,002	639,202	659,285	644,006	633,575	3,296,070
All causes	5,178,311	1,277,326	421,330	182,703	115,934	83,065	2,080,358
Small pox	57,422	7,686	2,502	2,320	2,328	2,533	17,369
Measles	91,948	19,925	34,586	16,254	8,948	4,927	84,640
Scarlet fever	174,232	10,183	25,342	29,901	27,599	21,980	115,005
Diphtheria	29,426	2,065	3,126	3,182	3,734	3,463	15,570
Whooping cough	124,532	53,239	38,610	16,053	8,261	4,203	120,366
Typhus	13,975	90	107	187	261	284	929
Enteric fever	78,421	1,767	2,708	3,118	2,842	2,745	13,180
Simple continued fever....	25,643	1,038	1,550	1,704	1,660	1,382	7,334
Puerperal fever	17,944	—	—	—	—	—	—
Diarrhœa and dysentery..	221,552	140,467	35,422	6,375	2,067	1,132	185,463
Cholera	6,104	2,214	692	205	147	86	3,344
Cancer.....	115,031	59	55	95	117	88	414
Scrofula	31,016	8,561	4,788	1,906	1,105	831	17,191
Tabes mesenterica	77,393	38,367	18,962	5,837	2,312	1,362	66,840
Phthisis	515,099	10,131	7,503	3,551	2,179	1,903	25,267
Hydrocephalus	77,260	26,524	19,259	8,229	4,877	3,731	62,620
Diseases of the—							
Nervous system.....	674,279	222,308	42,668	17,278	10,258	6,823	299,335
Circulatory system ...	318,373	1,306	486	355	374	447	2,968
Respiratory „	915,340	228,908	108,543	36,788	17,609	10,416	402,264
Digestive „	238,061	31,308	5,074	2,418	1,745	1,515	42,060
Urinary „	95,413	980	1,113	1,002	982	895	4,972
Generative „	13,341	66	27	16	8	6	123
Suicide	16,967	—	—	—	—	—	—
Childbirth	22,617	—	—	—	—	—	—
Violence	161,373	18,943	6,539	6,114	4,603	3,849	40,048
Other causes	1,065,549	451,191	61,668	19,815	11,918	8,464	553,066

Rate of infant mortality 149
 Marriages 1,960,543 = 16.11 per thousand.
 Births 8,588,782 = 35.28 „

Influence of Back-to-Back Dwelling Houses on Mortality.

[“Manchester Statistics, 1870-83.” By Dr. Tatham.]

Group.	Number of Enumeration Areas.	Percentage of Back-to-Back Houses.	Population.	Death-Rate per 1,000 Population per Annum.				
				All Causes.	Principal Infectious Diseases.	Phthisis.	Other Pulmonary Diseases.	Diarrhoea.
A. Regent Road District—								
I	72	—	54,264	26·1	4·9	2·7	5·7	1·54
II	10	18	8,773	29·1	4·9	2·7	7·5	1·85
III	6	50	4,380	37·3	7·6	4·5	8·6	2·83
B. Greengate District—								
I	9	—	8,713	27·5	4·5	2·8	6·6	1·42
II	13	23	11,749	29·2	4·8	3·3	7·8	1·55
III	12	56	11,405	30·5	6·2	3·6	7·9	2·12
One area of Group III }		100	892	38·4	8·7	5·2	9·2	3·36

*Dr. Russell's Statistics on the Influence of the Dwelling House on Mortality.**Glasgow, 1888.*

Disease.	Death-Rates per 100,000.		
	One and Two Room Houses.	Three and Four Room Houses.	Five Rooms and upwards.
Zymotic diseases	478	246	114
Acute diseases of the lungs, including consumption..... }	985	689	328
Nervous diseases and diseases of nutrition in children..... }	480	235	91
Accidents and syphilis in children	32	11	—
Miscellaneous unclassified diseases	799	764	590
All causes	2,774	1,945	1,123

Death-Rates at all Ages, and Rates of Infant Mortality in Twenty-Eight Large Towns, 1887.

England and Wales	18'8	145
Twenty-eight large towns....	20'8	168
Manchester.....	28'7	191
Preston	27'9	214
Blackburn	25'5	201
Newcastle	25'3	174
Oldham	23'8	187
Liverpool	23'7	186
Huddersfield	23'0	181
Plymouth	22'7	196
Salford	22'2	195
Cardiff.....	21'9	172
Wolverhampton.....	21'7	176
Sheffield.....	21'6	177
Bolton.....	21'3	171
Leeds	21'1	172
Halifax	21'0	153
Birkenhead.....	21'0	156
Bristol.....	20'4	149
Norwich	20'4	158
Bradford.....	19'9	178
Sunderland.....	19'7	151
Birmingham	19'7	176
London	19'6	158
Portsmouth	19'5	143
Leicester.....	19'5	209
Hull	19'2	165
Nottingham	18'7	170
Derby	17'1	142
Brighton.....	16'9	149

Influence of the Dwelling House on Mortality.

[NEWSHOLME, Society M.O.H., 13th April, 1892.]

District.	Number of Inhabited Houses.	Number of Families.	Number of Tenements with less than Five Rooms.	Proportion of such Tenements per Cent.	Families to each House.	Population.	Deaths.	Death-Rate.
A	1,228	1,731	1,122	64·8	1·41	7,224	404	27·99
B	2,538	3,451	1,721	49·9	1·36	14,835	707	23·83
C	4,871	6,609	3,109	47·0	1·36	27,871	1,004	18·01
D	3,596	4,840	1,943	40·2	1·35	20,109	674	16·75
E	2,326	3,263	1,300	39·8	1·40	13,883	412	14·84
F	1,432	1,596	258	16·2	1·11	8,857	231	12·98
G	2,521	2,813	410	14·6	1·11	15,419	333	10·79
H	668	748	113	15·2	1·12	5,112	89	8·70
	19,380	25,051	9,976	—	1·29	113,310	3,854	17·01

District.	Deaths.	Phthisis.	Tubercular.	Bronchial Catarrh, Pneumonia.	Respiratory.	Premature Births.	Others.
A	404	41	49	19	10	25	} 519
B	707	79	54	31	14	32	
C	1,004	124	117	42	28	49	
D	674	80	68	27	7	29	} 977
E	412	31	47	21	6	16	
F	231	22	13	12	9	7	
G	333	21	20	10	7	5	
H	89	3	5	2	3	1	

District.	Percentage of Total Population.	Total Deaths.	Deaths from Zymotics.	Measles and Whooping Cough.	Diarrhoea.	Phthisis.	Tubercular.	Bronchial Catarrh, &c.	Respiratory.	Premature Births.	Others.
—H	56·03	13·72	1·18	0·55	0·38	1·15	0·54	2·18	0·24	0·44	7·99
.....	24·59	18·11	2·22	1·25	0·69	2·10	0·75	3·31	0·50	0·88	8·25
and B	19·38	25·18	2·72	1·30	1·25	2·34	1·13	5·37	0·54	1·29	11·77

Analysis of Causes of Death during the Year 1889.

Causes of Death.		All Ages.	Months, 0—3.	Months, 3—6.	Months, 6—12.	Under 1 Year.	1—	2—	3—	4—	Under 5 Years.
0.	All causes, males	266,102	34,828	14,414	21,814	71,056	21,616	8,000	4,979	3,538	109,189
1.	Specific febrile or zymotic diseases	34,408	3,254	3,416	6,004	12,674	7,179	3,074	2,100	1,431	26,458
2.	Parasitic diseases	368	237	48	18	303	11	6	3	7	330
3.	Dietetic	1,186	79	44	27	150	3	0	1	0	154
4.	Constitutional diseases	45,427	878	1,455	2,395	4,728	2,651	978	601	418	9,376
5.	Developmental	21,059	9,418	198	78	9,694	35	8	5	3	9,745
6.	Local diseases	137,272	12,340	7,096	11,821	31,257	10,678	3,458	1,924	1,413	48,730
7.	Violence.....	12,587	718	241	134	1,093	302	321	292	233	2,241
8.	Ill-defined and not specified causes	13,795	7,904	1,916	1,337	11,157	757	155	53	33	12,155
0.	All causes, females.....	252,251	26,374	11,610	18,158	56,142	20,268	7,762	4,923	3,518	92,613
1.	Specific febrile or zymotic diseases	35,368	2,713	2,949	5,372	11,034	7,195	3,277	2,263	1,611	25,380
2.	Parasitic diseases	339	184	42	18	244	19	18	11	3	295
3.	Dietetic	712	66	34	20	120	8	1	0	0	129
4.	Constitutional diseases.....	46,240	614	1,150	1,891	3,655	2,273	806	529	411	7,674
5.	Developmental	23,040	7,337	171	73	7,581	40	11	9	6	7,647
6.	Local diseases	129,971	8,709	5,379	9,471	23,559	9,686	3,273	1,875	1,319	39,712
7.	Violence.....	4,910	719	234	131	1,084	243	214	180	135	1,856
8.	Ill-defined and not specified causes	11,671	6,032	1,651	1,182	8,865	804	162	56	33	9,920

Infant Mortality and Density of Population.

Registration County.	Rate of Infant Mortality.		Estimated Population middle of 1891.	Acreage.	Acres per Person.
	1881-90.	1891.			
ENGLAND AND WALES	142	149	29,081,047	37,239,351	1·28
I. LONDON	152	155	4,221,452	74,692	0·18
II. SOUTH EASTERN—					
Surrey	110	110	575,078	453,028	0·78
Kent	116	118	808,872	970,060	1·2
Sussex	109	109	556,136	947,132	1·7
Hampshire	112	116	668,681	1,046,576	1·5
Berkshire	105	116	268,888	574,808	2·1
III. SOUTH MIDLAND—					
Middlesex.....	128	119	580,607	178,755	0·3
Hertford	108	102	215,480	441,623	2·0
Buckingham.....	116	112	164,537	410,176	2·5
Oxford	113	122	188,372	489,727	2·6
Northampton	132	135	308,971	632,982	2·0
Huntingdon	107	110	50,199	204,473	4·0
Bedford.....	131	115	166,298	307,050	1·8
Cambridge	121	119	196,373	573,793	2·9
IV. EASTERN—					
Essex.....	126	124	766,903	904,194	1·1
Suffolk	114	110	353,948	923,709	2·6
Norfolk.....	135	142	460,649	1,308,719	2·8
V. SOUTH WESTERN—					
Wilts.....	103	100	255,264	797,457	3·1
Dorset	96	83	189,045	610,582	3·2
Devon	121	125	636,860	1,643,390	2·5
Cornwall	137	147	318,326	879,328	2·7
Somerset	110	113	510,507	1,066,938	2·0
VI. WEST MIDLAND—					
Gloucester	124	134	549,474	700,080	1·2
Hereford	109	121	113,243	519,141	4·5
Salop.....	117	120	254,390	933,582	3·6
Stafford.....	156	163	1,105,845	766,688	0·69
Worcester.....	134	139	423,551	434,554	1·0
Warwick	150	155	803,624	610,587	0·76

Infant Mortality and Density of Population—Contd.

Registration County.	Rate of Infant Mortality.		Estimated Population middle of 1891.	Acreage.	Acres per Person.
	1881-90.	1891.			
VII. NORTH MIDLAND					
Leicester	164	174	380,624	535,103	1.4
Rutland	111	154	22,094	107,352	4.8
Lincoln	132	136	467,221	1,731,718	3.7
Nottingham	154	154	506,936	604,181	1.1
Derby	134	139	433,628	556,869	1.2
VIII. NORTH WESTERN					
Cheshire	142	149	710,245	643,745	0.9
Lancashire	166	176	3,970,532	1,307,381	0.3
IX. YORK—					
West Riding	156	168	2,471,437	1,776,884	0.7
East „	149	153	400,948	696,296	1.7
North „	135	139	354,907	1,253,649	3.5
X. NORTHERN—					
Durham	152	168	1,028,241	765,075	0.7
Northumberland ...	142	159	508,041	1,290,312	2.5
Cumberland	123	132	266,951	970,161	3.6
Westmorland	100	110	66,257	503,073	7.5
XI. WELSH—					
Monmouth	140	160	276,184	427,848	1.5
South Wales	140	157	1,054,519	2,676,723	2.5
North „	119	126	450,689	1,989,157	4.4

Statistics of Block Buildings.

District.	Year.	Scarlatina.	Diphtheria.	Typhoid.	Measles.	Pertussis.	Diarrhœa.
Peabody Dwellings	1888-89	343	539	73	1,040	858	563
London	„	226	339	143	549	553	568
Peabody Dwellings	1890	634	147	97	1,026	2,052	391
London	„	197	320	149	724	741	672
Improved Industrial Dwellings }	1886-90	238	149	62	344	617	352
Metropolitan Association Dwellings }	„	222	369	74	593	482	556

	Death-Rate, 1886-89.	Birth-Rate, 1886-90.	Year.	Rate of Infant Mortality.	Density of Population.
Peabody Dwellings	19'11	40'24	1882-90	139'2	751
Metropolitan Association Dwellings }	18'79	32'98	'86-90	121'0	—
Improved Industrial Dwellings }	12'46	35'21	'86-90	130'0	—
London	15'74	30'81	'82-90	151'9	58

		Peabody Buildings.	London.
Mean annual death-rate per 1,000 living, 0—5 years	Measles	6'25	4'21
	Pertussis	5'08	4'25
Mean annual death-rate per 1,000 living, all ages	Measles	1'04	0'55
	Pertussis	0'86	0'55
	Phthisis	1'82	1'77
	Tubercular	2'63	2'53

There was also an excess of deaths from respiratory diseases, violence, and ill-defined causes.

In 1884 there were 10,144 living rooms provided in the Peabody buildings, occupied by 18,453 persons. In that year the birth-rate was 4'46 per cent. (1'09 per cent. higher than the London rate). The general death-rate was 1'91 per cent. (0'12 lower than the London rate). The rate of infant mortality was 13'87 per cent. (1'37 per cent. below the average for London).—*Newsholme: Royal Statistical Society's Journal.*

Analysis of Causes of Death, Infants, 1881-90.

	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1881-90.
<i>Total births</i>	883,642	889,014	890,722	906,750	894,270	903,866	886,331	879,868	885,944	869,937	—
<i>Total deaths</i>	114,976	125,020	122,226	133,128	123,130	134,870	128,287	120,079	127,198	130,955	—
<i>Miasmatic Diseases.</i>											
Small pox, vaccinated	14	2	1	7	10	1	2	2	—	1	40
" unvaccinated	144	43	32	118	166	9	20	51	—	—	583
" no statement	161	84	93	129	166	21	39	69	2	2	766
Chicken pox	72	59	56	72	58	53	43	68	55	53	589
Measles	1,518	2,852	1,944	2,447	2,991	2,498	3,387	1,964	3,129	2,636	25,366
Epidemic rose rash	5	18	13	5	19	14	24	22	14	19	153
Scarlet fever	760	774	653	586	391	392	444	362	342	357	5,061
Typhus	1	1	4	1	1	1	1	—	—	—	10
Influenza	28	23	27	21	52	33	35	34	27	295	575
Whooping cough	4,656	6,309	4,517	5,011	5,764	5,685	4,750	5,409	5,327	5,979	53,407
Mumps	31	18	17	16	29	14	18	18	20	19	200
Diphtheria	128	186	174	250	209	208	225	245	274	224	2,123
Cerebro-spinal fever	2	2	1	3	1	1	1	1	—	3	15
Simple and ill defined fever	50	44	51	31	32	29	23	20	34	27	341
Enteric fever	40	40	39	45	37	45	30	22	34	34	366
<i>Diarrhoeal Diseases.</i>											
Cholera	101	111	111	276	113	223	235	105	142	180	1,597
Diarrhoea, dysentery	9,408	10,680	9,962	17,754	8,821	16,514	14,101	8,212	12,279	11,615	119,346
<i>Malarial Diseases.</i>											
Remittent fever	32	21	23	20	13	14	10	7	9	4	153
Ague	1	4	4	—	—	—	—	—	—	3	12

	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1881-90.
<i>Zoogenous Diseases.</i>											
Hydrophobia	—	—	—	—	—	—	1	—	—	—	1
Splenic fever	—	—	—	—	1	—	—	—	—	—	1
Cow pox, vaccination	56	65	51	49	50	45	45	44	55	43	503
<i>Veneral Diseases.</i>											
Syphilis	1,540	1,666	1,773	1,733	1,652	1,701	1,584	1,452	1,500	1,483	16,084
<i>Septic Diseases.</i>											
Phagedæna	10	14	9	10	13	11	8	19	12	10	116
Pyæmia septicæmia	90	79	74	80	66	54	64	63	60	58	688
Erysipelas	644	663	641	618	573	428	539	526	393	394	5,419
<i>Parasitic Diseases.</i>											
Thrush	790	693	819	829	672	787	631	522	542	639	6,924
Others—vegetable parasites	4	6	2	4	3	4	4	3	2	—	32
Hydatid diseases	—	—	1	—	—	1	—	—	—	—	2
Others—animal parasites	2	5	4	5	5	2	5	—	3	—	31
<i>Dietetic Diseases.</i>											
Starvation—want of breast milk	407	407	426	247	225	227	267	261	269	232	2,968
Scurvy	1	2	1	—	4	1	2	1	1	2	15
<i>Constitutional Diseases.</i>											
Rheumatic fever	7	5	7	11	9	6	4	6	9	7	71
Rheumatism	2	1	—	—	—	—	—	1	—	2	6
Rickets	118	125	138	164	162	251	202	280	294	362	2,096
Cancer	9	12	7	13	10	15	9	11	15	18	119
Tabes mesenterica	3,738	4,123	3,809	4,282	3,493	4,463	3,810	3,523	3,907	4,046	39,194

Analysis of Causes of Death, Infants, 1881-90—Contd.

	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1881-90.
<i>Constitutional Diseases—Contd.</i>											
Tubercular meningitis	2,231	2,104	2,112	2,167	2,086	2,145	1,917	2,023	1,890	2,001	20,676
Phthisis	771	815	820	768	687	763	723	616	586	698	7,247
Other tuberculoses—scrofula.....	900	978	978	1,167	1,204	1,364	1,301	1,275	1,417	1,404	11,988
Purpura	49	79	72	63	67	91	57	78	81	43	680
Anæmia leucocythæmia	239	257	232	208	202	202	222	217	175	157	2,111
Diabetes mellitus.....	1	1	4	5	2	2	3	4	3	6	31
Others and ill defined.....	1	2	—	2	1	1	2	2	6	2	19
<i>Developmental Diseases.</i>											
Premature birth	12,048	12,434	12,872	13,076	12,904	13,642	14,086	14,063	14,439	15,208	134,772
Atelectasis	628	687	600	541	673	667	707	823	745	757	6,828
Cyanosis	759	801	771	797	898	876	764	759	882	798	8,055
Spina bifida	593	612	563	596	611	577	636	686	582	542	5,998
Imperforate anus.....	194	203	208	285	191	185	180	170	187	159	1,982
Cleft palate, hare lip	188	182	203	196	187	194	184	190	198	176	1,898
Other congenital defects	238	250	196	234	279	302	217	319	292	369	2,696
<i>Diseases of Special Senses.</i>											
Otitis; otorrhœa.....	48	56	56	67	64	83	68	85	93	117	737
Epistaxis and nose	23	11	25	9	22	23	13	19	22	19	186
Ophthalmia and eye	37	31	31	37	39	37	43	31	42	25	353
<i>Diseases of Nervous System.</i>											
Inflammation of brain	1,832	1,945	2,113	2,140	2,117	2,445	2,330	2,211	2,363	2,361	21,857
Apoplexy	138	130	170	119	118	110	115	99	106	144	1,249
Softening	1	—	2	2	1	5	1	1	—	2	15
Hemiplegia	4	4	1	8	3	4	11	17	9	27	88

	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1881-90.
<i>Diseases of Nervous System—Contd.</i>											
Chorea	2	—	2	—	—	—	2	—	—	—	6
Epilepsy	63	68	78	105	104	100	89	84	93	78	862
Convulsions	17,978	18,460	18,280	18,772	18,136	18,693	17,894	17,252	17,999	17,897	181,361
Laryngismus	425	428	467	434	426	415	419	437	410	380	4,241
Tetanus	3	1	7	3	3	3	4	3	—	2	29
Paraplegia	42	39	45	60	49	54	39	43	48	26	445
Others and ill-defined	443	651	652	639	567	609	550	537	450	407	5,505
<i>Diseases of Circulatory System.</i>											
Endocarditis	2	3	9	6	12	11	7	9	11	16	86
Pericarditis	10	5	11	7	8	8	14	11	7	17	98
Angina	—	1	1	1	—	—	—	—	—	—	3
Syncope	70	65	88	85	81	109	130	101	124	163	1,016
Aneurism	—	—	1	1	—	—	—	2	—	—	4
Embolism	9	9	1	6	3	4	10	11	7	13	73
Phlebitis	4	4	7	3	3	2	6	5	2	2	38
Others and ill-defined	54	60	123	102	107	122	228	185	218	186	1,385
<i>Diseases of Respiratory System.</i>											
Laryngitis	166	168	197	208	202	220	224	212	222	255	2,074
Croup	370	409	440	419	455	402	441	381	375	340	4,032
Other diseases of larynx	27	21	38	23	15	21	22	39	30	16	252
Emphysema	1	5	15	17	12	11	12	8	7	16	104
Bronchitis	14,104	16,523	15,845	15,341	17,473	16,533	16,045	16,373	16,118	17,231	161,586
Pneumonia	5,119	5,785	5,647	5,489	6,088	5,682	6,075	6,134	6,335	7,139	59,493
Pleurisy	36	34	43	49	42	53	48	44	47	53	449
Others and ill-defined	1,223	1,329	1,290	1,359	1,398	1,315	1,248	1,259	1,226	1,159	12,806

Analysis of Causes of Death, Infants, 1881-90—Contd.

	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1881-90.
<i>Diseases of Digestive System.</i>											
Stomatitis	215	250	264	363	274	340	338	288	396	281	3,009
Dentition	2,469	2,539	2,562	2,676	2,608	2,715	2,379	2,354	2,418	2,534	25,254
Sore throat	87	97	84	92	82	90	90	77	77	87	863
Dyspepsia	126	162	166	188	158	225	190	183	212	235	1,845
Hæmatemesis	23	18	18	22	22	23	21	20	26	18	211
Melæna	57	45	52	36	41	65	54	56	39	41	486
Diseases of stomach	323	296	407	541	545	809	708	667	727	932	5,955
Enteritis	903	1,049	1,010	1,261	1,101	1,702	1,588	1,532	2,084	2,462	14,692
Ulceration of intestine	23	27	33	19	24	24	16	14	20	26	226
Ileus	164	213	135	97	195	206	196	212	223	228	1,869
Strangulation	8	4	2	1	1	2	3	8	5	4	38
Intussusception	134	139	145	144	148	156	183	171	164	166	1,500
Hernia	72	68	74	79	82	96	56	69	81	64	741
Fistula	1	2	—	—	—	1	3	4	2	—	13
Pertontitis	147	170	183	177	178	189	194	165	162	198	1,763
Ascites	12	13	11	13	10	11	16	8	9	9	112
Gallstones	1	—	—	—	—	—	2	—	—	1	4
Cirrhosis	2	1	4	3	6	5	9	3	1	1	35
Other liver diseases	839	864	820	899	796	858	821	787	773	764	8,221
Others and ill-defined	383	450	391	200	89	94	125	257	191	252	2,432
<i>Diseases of Lymphatic System.</i>											
Lymphatic diseases	34	38	8	17	20	30	20	17	18	23	225
Diseases of spleen	6	5	8	7	15	7	8	7	5	2	70
Bronchocele	—	—	—	1	—	3	—	6	4	5	19

	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1881-90.
<i>Diseases of Urinary System.</i>											
Acute nephritis	39	52	56	65	77	69	58	84	86	73	659
Bright's disease	37	38	41	55	66	57	56	46	62	46	504
Uræmia	7	10	5	5	10	7	2	10	5	9	70
Suppression of urine	9	13	15	16	8	16	14	10	13	15	129
Calculus	—	—	—	—	1	1	2	—	—	—	4
Hæmaturia	4	4	—	5	2	2	2	4	2	—	25
Diseases of bladder	4	3	3	3	7	6	8	4	7	6	51
Others	15	20	20	28	42	29	25	31	19	29	258
<i>Diseases of Bones and Joints.</i>											
Caries	14	24	27	22	39	26	20	20	28	15	235
Arthritis	14	9	11	16	14	17	10	15	10	23	139
Others	39	38	25	18	22	38	44	36	26	38	324
<i>Diseases of Reproductive System.</i>											
Ovarian disease	—	1	—	—	—	—	—	—	—	—	1
Uterus	8	10	9	9	7	6	5	8	11	13	86
Pelvic abscess	1	—	2	2	1	—	1	—	1	—	8
Perineal abscess	2	2	2	4	1	1	3	1	2	1	19
Testes, penis, &c.	19	27	19	23	21	15	11	21	14	21	191
<i>Diseases of the Skin.</i>											
Carbuncle	2	2	4	—	1	—	7	3	3	3	25
Phlegmon	53	53	74	68	68	80	65	84	57	97	699
Lupus	—	—	1	—	—	2	—	—	—	1	4

Analysis of Causes of Death, Infants, 1881-90—Contd.

	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1881-90.
<i>Diseases of the Skin—Contd.</i>											
Ulcer	51	48	56	32	30	32	48	36	41	41	415
Eczema	216	258	242	285	255	270	238	266	255	263	2,543
Pemphigus	35	65	47	55	49	61	68	66	77	70	593
Others	128	124	112	151	108	112	107	100	96	98	1,136
<i>Violence.</i>											
Fractures	82	63	72	76	77	63	89	76	59	64	121
Gunshot	—	—	—	—	—	—	—	—	2	—	2
Cut, stab	1	—	—	3	2	—	—	4	1	4	15
Burn, scald	114	103	126	104	98	110	119	114	103	110	1,101
Poison	34	26	39	21	27	18	24	18	23	22	252
Drowning	64	49	38	24	24	17	24	30	30	34	334
Suffocation	1,389	1,388	1,431	1,377	1,355	1,445	1,505	1,647	1,633	1,776	14,956
Others	194	199	296	290	303	294	260	321	228	300	2,685
Murder	134	101	110	98	90	96	114	100	98	88	1,029
<i>Others and Ill-defined Causes.</i>											
Dropsy	78	70	82	48	30	26	27	25	15	21	422
Debility, Atrophy and Inanition	18,832	19,449	20,450	21,181	18,904	20,819	18,972	18,417	18,615	18,890	194,529
Mortification	32	30	26	16	17	12	18	22	14	26	213
Tumour	7	10	16	15	11	22	8	6	7	8	110
Abscess	196	242	213	235	209	223	239	219	184	188	2,148
Hæmorrhage	19	14	11	4	7	6	21	9	13	10	114
Sudden	57	53	74	97	86	89	98	96	69	86	810
Others	1,373	1,180	1,364	1,389	1,307	1,294	1,235	1,184	1,105	1,075	12,556

DISCUSSION *on* DR. JONES'S PAPER.

THE PRESIDENT said he was sure that all those present would feel, with him, that the paper just read was well worthy of being connected with the name of Howard. There was good ground for hope in the figures laid before them, for one, at least, of the causes of the high death-rate among infants was remediable, namely ignorance. This high mortality was commonly associated, in the minds of most people, with murder for the sake of the insurance money, and it was very satisfactory to find that there was no sufficient evidence to bear out such a supposition. Poverty, and still more, ignorance and folly, were the causes of the large death-rate. The improper feeding of the children was due to the extraordinary recklessness on the part of the poor, and the same food was often given to infants under one year as to adults. One reason why the mortality among Scotch children was less than amongst the English seemed to be that the food generally consumed there was more suitable for children than in England. Dangers from illness, such as croup and the like, could often only be obviated by lavish expenditure, and in these cases the poor were at a great disadvantage; but the majority of the causes of infantile death would disappear if the people were better educated.

Mr. F. HENDRIKS concurred with the President in taking a hopeful view of the figures. He had been rather struck with the observation to the effect that the mortality tended to increase where the purse was lighter. Statistical information was wanting as to the rates of infant mortality amongst the classes and the masses; but some twenty years ago, the late Mr. Charles Ansell (junior) had collected statistics in reply to a large number of circulars sent to the upper and professional classes regarding this point. The returns were, of course, of a purely voluntary nature, and the results, therefore, not perfectly satisfactory: but the impression he had gathered from Mr. Ansell's researches was that the mortality during the first five years of life did not differ much in the some classes. That inquiry did not, however, cover more than some 50,000 children. He was afraid that the actuaries could not throw much light upon this question, as very few of them had anything to do with the insurance of children in particular.

Dr. FRANCIS WARNER said that he was not fully competent to speak upon the statistics of infant mortality, but he would like to say a few words concerning his own observations among school children. The author had referred to the laborious occupations of women in connection with the developmental condition of their children, this subject had now an important bearing on the labour question, and there was no doubt that the large number of badly-developed children, who reached adult age, had greatly increased

the number of the unemployed. The President had spoken of the advantages possessed by the wealthy in rearing children, but he (Dr. Warner) had found (*Journal of the Royal Statistical Society*, March, 1893, pp. 71—95) that, contrary to expectation, ill-development among children did not appear to be more common amongst the very poorest classes than amongst the middle and better class families. The proportion of cases of low nutrition and of defective development was in fact rather higher in the middle class than in the poorest elementary schools, and he did not think the born-chance of living, and the physical development of the poorer children were less than those of the better classes. Atrophy without disease generally occurred among children with small and imperfect brains, and such children if they grew up were apt to be delicate. An improvement in the general conditions of development among the child population would greatly diminish the infant mortality, and would also prevent many children from growing up mere weaklings. The proportion of ill-developed children varied much in different districts, and conditions of building were of importance. Dr. Jones had spoken with qualified approval of the artisans block-dwellings, and his (Dr. Warner's) own observations had led him to conclude that degenerative changes were possibly taking place (especially among the girls, who were more susceptible to conditions of environment) in neighbourhoods where many such buildings existed. He had noticed this more particularly in the city of London, where not only did the people inhabit the large block dwellings, but the neighbourhood consisted, as it were, of deep valleys overshadowed by high mountains. The same thing could be said of the higher class residential property in Kensington and Chelsea, for there the children were much inferior to those of poor districts like Islington; and these conclusions appeared to be confirmed by inquiries amongst the schools in these districts.

He would be glad to know if Dr. Jones could state anything concerning the different mortality, in boys and girls, of the conditions of defective development. He had, himself, found that while a greater number of boys showed the conditions of bad development (except small heads), yet when the girl had some mal-development she was more delicate than the boy, and he should suspect that developmental causes conduced more to mortality among girls than among boys. Again, the variation of infant mortality according to the nationality would be extremely interesting; the conditions of development among Jews, Irish, and English varied greatly. He agreed that much good was to be expected from more general education, and this appeared to him one reason why the Jewish children, sometimes living under the most disadvantageous circumstances and in great poverty, as in Whitechapel, were yet seldom affected with atrophy, &c. The converse of this held good among the Irish, among whom education was not so general, and not of such long standing.

Mr. NOEL A. HUMPHREYS thought that, in one or two respects, the statistics might be improved. He entirely approved of con-

fining the term "infant" to children under 1 year of age, and also of the method of calculating infant mortality by the proportion of deaths under that age to the births: this method was above suspicion now that birth registration was practically complete. But partly from necessity, Dr. Jones had also adopted another method, which was open to very grave objection. He had in Tables II and III calculated the proportion of deaths under 1 year to the estimated number of persons living under 1 year of age. In the census returns the number of persons living under 1 year of age was very much under-estimated, because parents in their census schedules frequently returned a child in its first year, as aged 1 year, and consequently the number of children under 1 year of age is very considerably under-stated in the census returns. With regard to the influence of female occupation upon infant mortality—a subject of which the importance could scarcely be over-rated—he thought that this question had been pre-judged without sufficient evidence. It was well known that the infant death-rate was high in Lancashire and the West Riding of Yorkshire, where many women were employed in the factories, and also that it was low in rural districts, where there was much less female occupation. He was quite prepared to believe that factory employment of married women must be injurious to the health of their children; still, statistics did not entirely support the assertion that factory employment was the main cause of the high rate of infant mortality in Lancashire. In Durham and South Wales, both mining districts, where females were consequently not much engaged in industrial occupations, the infant mortality was higher than in the West Riding of Yorkshire. Again, the gradual increase in the number of premature births had been attributed to the increasing employment of women; but the death-rate from premature births was higher in Norfolk and Suffolk than in Lancashire and the West Riding of Yorkshire, where the industrial employment of women had reached its highest development: 37 to 43 per cent. of the women in the two latter counties were engaged in some occupation, against only 20 per cent. in Norfolk and Suffolk. Of course it was impossible to say that premature births and the employment of females were *not* connected, but the question required fuller and more careful investigation. His own inquiries led him to the belief that overcrowding and other general insanitary conditions had a much greater influence on the rate of infant mortality than female occupation, and he hoped that some reliable statistics might shortly be prepared in order to throw more light on this important question.

Mrs. FAWCETT said that it must not be overlooked, in considering the effect of the employment of women on infant mortality, that the present century, which had eminently been one of the uprise and growth of women's occupation, was also a century of the most rapid increase in the population. The number of the people had more than trebled itself since 1800 (the population of England and Wales having grown in that time from nearly 9,000,000 to

29,000,000), whereas it took something like four centuries from the time of the Black Death up to the year 1800 to even double the population. Therefore it seemed that general insanitary conditions were a much more important factor than industrial employment in the high rate of infant mortality. Although no doubt in many cases children suffered from the absence of the mothers from home, there were compensating circumstances, such as her being able to provide them with better food and better sanitary surroundings with the result of her labour, and this was the more marked in the case of children who had weathered the storms of the first year of infancy. These advantages, she thought, went a long way towards compensating the ill effects of the mother's industrial employment.

Mr. A. H. BAILEY said that a good many years ago, he, with a friend, had made an investigation into the rate of mortality among the families of the peerage, and amongst other remarkable results he had found that the rate in the children of these families differed in a marked degree from that of the population generally, being much more favourable. Those observations were more to the purpose than Mr. Ansell's statistics. He was very glad to hear Dr. Jones's opinion as to the insurance on the lives of children. He considered it a shameful thing to say that human beings effected insurances on the lives of their children in order to make a monetary profit. There was one society at the present moment which had insurances on the lives of more than 2,000,000 children: that Society had investigated the mortality among those children with extreme accuracy, with the result that the mortality was found to be less among them than among the children throughout the country generally. As a matter of fact, mothers desired to have what they called a decent funeral, and the death-rate among infants was so high, that they persuaded the husband to lay by a penny a week, for which they could obtain a minimum sum of thirty shillings, and a maximum of ten pounds. It was not thrift, it was simply a provision for a calamity to which infants were peculiarly liable.

Mr. ROWLAND HAMILTON wished to thank Dr. Jones for this contribution to the many sources of inquiry made with regard to the system of national education. The great work done by the Educational Department had been the training of teachers. Many men and women were engaged in teaching with much zeal and earnestness, and it was through the agency of training colleges that they hoped to enlarge the range of the subjects taught. With regard to the insurance of infants, he had himself made some inquiries into the subject, and had come to the conclusion that the general charge of insuring children to obtain the money on their early death was a gross libel upon the masses. Poor people spoke of the death of their children, or of their own, in a way which was perhaps somewhat shocking to others. Death was more familiar to them, and there might be some reasons for the safeguards adopted by many prominent insurance companies; but

it must not be forgotten that one of the reasons for the institution of friendly societies was to secure the seemly funeral for their dead, which was so great an object of desire to the class who supported the institution.

Mr. E. A. RUSHER asked whether Dr. Jones had any special reason for the assertion that, while the Rev. Benjamin Waugh estimated that 33 per cent. of the children of the industrial classes were insured, and Captain Marshall estimated the same proportion at 80 per cent., the truth probably lay between these two figures. He himself thought that the 80 per cent. was very much nearer the actual fact. This would also seem to be in close agreement with Dr. Jones's own experience, that "85 per cent. of the children in his own hospital were insured."

Dr. HUGH JONES, in reply, said that the statement that "the heavier the purse the less the mortality," was borne out by certain statistics from Preston, where it was found that the child mortality among the upper class was much less than among the lower. In answer to Dr. Warner, he could also state that the death-rate from congenital malformation was higher for boys than for girls. The influence of nationality was a difficult subject to tackle in Liverpool, owing to the variety of races there represented, and it was a subject which, for the sake of peace, it was better to avoid. He quite agreed with Mr. Humphreys as to the importance of considering the rate of infant mortality rather than the infant death-rate. He held a very definite opinion that the industrial occupation of women did conduce to excessive infant mortality. The impression left upon his mind by his hospital experience was that where the mother was at work, the infant was almost always neglected; and when such children were admitted into hospital, they generally proved bad patients. There were some statistics on this point. During the last twenty-five years the general death-rate in Belgium had decreased from 24 or 25 per cent. to 20·25, and the sanitation there had greatly improved, yet the rate of infant mortality had risen from 148 to 159 per cent.; and the only explanation which had been offered was the more frequent employment of women in industrial occupations during the last twenty-five years. The statement as to the proportion of children insured required a little explanation. He was decidedly of opinion that Mr. Waugh had under-estimated, as much as Captain Marshall had over-estimated, the proportion, in spite of the fact that he, himself, had found that 85 per cent. of his hospital patients were insured. But in dealing with hospital statistics he had entirely confined himself to children under 18 months old; and the number of policies which lapsed between the ages of 18 months and 10 years was quite sufficient to account for the discrepancy between his figures and those obtained from inquest statistics.

A cordial vote of thanks to Dr. Jones brought the proceedings to a close.

OCEAN HIGHWAYS: *their BEARING on the FOOD and WAGES of GREAT BRITAIN.* By THE RIGHT HON. LORD GEORGE HAMILTON, M.P.

[Read before the Royal Statistical Society, 20th February, 1894.
The President, CHARLES BOOTH, Esq., in the Chair.]

It is with some trepidation that I undertake to read a paper on the above subject before this Society; but the opinions therein stated, and the propositions sought to be established, are the result of long personal acquaintance with and study of a question which, beyond all others, affects the material wellbeing of the country, and which, so far as I know, has not been yet examined or pronounced upon by statisticians except in a somewhat perfunctory and casual manner.

I have therefore endeavoured to put the successive stages of reasoning, by which I arrive at certain conclusions, in such a statistical form as will enable the practised controversialists in this Society to rapidly test their soundness or fallacy.

Many of the most notable papers read in recent years before this body have demonstrated the rapid augmentation of wealth which, decade by decade, this country has and is accumulating under a policy of practically free imports; and the labours and investigations of some of the ablest and best known statisticians have been devoted with great success to tracing the distribution of this increase of substance with a view of ascertaining how far all sections of the community have benefited by it. The result of their labours has been to show that the distribution and dispersion of this increase of wealth has been wide and general, so much so that notwithstanding the great growth of the population as shown by the decennial censuses, the material position of all classes has continuously improved, so far as wellbeing can be tested by accurate estimates of income and consumption.

A great and marked success in these respects has attended our past policy of freeing imports from hostile imposts or obstructive tariffs. But the continuous success of a policy of free imports into an island (I use these words advisedly in place of those generally in vogue, "free trade," for situated as Great Britain is, it is her importing powers which dominate her exporting capacity) largely depends upon the free control and uninterrupted use of the ocean highways leading to that island. England has had that great advantage for a continuous and uninterrupted period of

nearly ninety years, for from the date of the battle of Trafalgar up to now she has been undisputed mistress of the area which these trade routes and highways traverse. Mr. Glover, in March, 1892, read a paper before the Society in which he showed for the later half of this period of ninety years, viz., from 1850 to 1890, the use this country had made of the advantages of long and unbroken free ocean transport. Taking decade by decade he showed that the total entries and clearances at the ports of the United Kingdom had grown with unexampled rapidity.

In 1850 the total entries and clearances were under 40 million tons; in 1860 they were under 59 million tons; in the next decade, 1870, they had reached 73 million tons; in the next ten years, 1880, they had grown to 133 million tons; and finally in 1890 they had arrived at the high figure of 164 million tons.

Thus, within a period of forty years the entries and clearances by our marine transport have more than quadrupled themselves. But these figures contain the tonnage entered and cleared coastwise, which relate more to the home than foreign trade. The table below gives the tonnage over this period appertaining to both classes of trade:—

[000's omitted.]

	Total Entries and Clearances.	Coastwise.	Foreign Trade only.
1850.....	39,634,	25,129,	14,505,
'60.....	58,707,	34,017,	24,689,
'70.....	73,198,	36,558,	36,640,
'80.....	133,250,	74,514,	58,736,
'90.....	164,340,	90,056,	74,283,

It will thus be seen that the increase in the foreign trade is relatively greater than in the coast trade, and that whereas the total entries and clearances have quadrupled themselves in this period, the foreign trade entries and clearances have risen from $14\frac{1}{2}$ millions to 74 millions, and quintupled themselves.

During this period the population has risen from 27,721,056 in 1850, to 38,101,975 in 1890.

I have had some difficulty in obtaining accurate data upon which to base an estimate of the income of the country at the beginning and end of this period; but Mr. Giffen, in his "Essays in Finance," 2nd series, p. 433, accepts, in the following words, Professor Leone Levi's calculations for a certain portion of this period, viz., from 1867-84, as regards the relative earnings of the working classes, both in the aggregate and individually:—

"In the seventeen years 1867-84, Professor Levi finds that "the aggregate earnings of the working classes have risen from

"418 million £ to 520 million £, or nearly 25 per cent., the increase of the numbers being only 11 per cent.; and the average increase per head is from 38*l.* to 42*l.* 14*s.*—or rather more than 11 per cent."

We may therefore safely accept this statement, although it only covers a portion of the period with which I am dealing, and assume that for the remainder of the period the earnings per head of the working classes were on the rise and not on the fall.

As regards the rise and fall of the price of necessaries, the "Agricultural Returns for Great Britain for 1892" (published by the Board of Agriculture, C-6743), give us most valuable information, for on p. 23 is shown the price of wheat, barley, and oats for the last twenty years:—

Year.	Wheat, per Quarter.		Barley, per Quarter.		Oats, per Quarter.	
	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>
1872.....	57	—	37	5	23	2
'82.....	45	1	31	2	21	10
'92.....	30	3	26	2	19	10

and for meat during the same time:—

Year.	Beef.		Mutton.		Pork.	
	Per 8 lbs.		Per 8 lbs.		Per 8 lbs.	
1872.....	4 <i>s.</i>	2 <i>d.</i> to 5 <i>s.</i> 10 <i>d.</i>	4 <i>s.</i> 10 <i>d.</i> to 6 <i>s.</i> 8 <i>d.</i>		3 <i>s.</i> 6 <i>d.</i> to 4 <i>s.</i> 9 <i>d.</i>	
'82.....	4 <i>s.</i>	— <i>d.</i> „ 6 <i>s.</i> — <i>d.</i>	5 <i>s.</i> 4 <i>d.</i> „ 7 <i>s.</i> 2 <i>d.</i>		4 <i>s.</i> 3 <i>d.</i> „ 5 <i>s.</i> — <i>d.</i>	
'92.....	2 <i>s.</i> 11 <i>d.</i>	„ 4 <i>s.</i> 9 <i>d.</i>	3 <i>s.</i> 7 <i>d.</i> „ 5 <i>s.</i> 7 <i>d.</i>		2 <i>s.</i> 11 <i>d.</i> „ 4 <i>s.</i> 7 <i>d.</i>	

and the fall in price, combined with the rise in wage, has resulted in the following gratifying increase of consumption per head of the population of food imported from abroad:—

Periods.	Wheat in Grain.	Flour.	Potatoes.	Fresh Beef, Mutton and Pork.	Bacon and Hams.	Butter and Margarine and Cheese.	Eggs.
	lb.	lb.	lb.	lb.	lb.	lb.	No.
Avg. of 5 years 1871-75	152	19	16	0·2	7·8	9·5	19
„ '76-80	174	28	28	1·7	13·5	11·9	22
„ '81-85	186	45	11	3·5	11·8	12·9	26
„ '86-90	170	48	7	7·0	12·9	14·5	31
Single year 1891	196	49	9	11·0	14·0	16·0	34

It will be observed by a study of this table that the consumption of the main necessaries of life contained in it have risen greatly, with the single exception of potatoes, and the fall in the import of this vegetable per head is not unsatisfactory, for it does not

indicate a reduction in the general consumption of vegetables throughout the United Kingdom, but a diminution of the class who entirely depended upon that vegetable for their sustenance, and the substitution generally of more nutritious food in its place.

I speak subject to correction, but I believe that I am accurate in saying that such an increase of population in so circumscribed and long settled a country, accompanied by such a rise in wages and such a fall in the price of the main necessities of life, is without precedent, or at any rate without authentic statistical record.

Cause and effect are here placed in close relation. It is because access to the highways of the sea have for so long a time been free and undisputed, that Great Britain has been able to so utilise her insular geographical position, and thus rapidly develop the other many advantages which the possession of exceptional mineral wealth gives her. This combination has enabled her to reverse the social and economic phenomena of the past, and with an increasing population, pressing upon the means of subsistence, to lower the cost of the necessities of life, and yet increase the wage remuneration of her industrial classes.

The feat is remarkable. This little island, situated at one end of the smallest continent of the world, has so developed her mercantile marine and ocean carrying transport, that she holds under her flag alone 72 per cent. of the total ocean steam going tonnage (see Glover, March, 1892, Table XV) of the whole world. Through the instrumentality of her navy and this vast merchant fleet, she has not only established great colonies and dependencies beyond the sea, but she has absorbed and retained the larger proportion of the trade of these expanding communities, and she has in addition laid the whole world under contribution to administer to the wants and food requirements of her increasing population.

These great achievements are worth recording and eulogising; but we must never forget that remarkable as they are, conducive as they have been to the prosperity and wellbeing of the community, they carry within themselves the germ of an ever present and ever increasing danger. Every year we are becoming more and more dependent upon others for the means of daily subsistence, not only as regards the supply of food, but also of that raw material upon which the great mass of our home industries depend.

Free and independent are the two epithets by which Englishmen love to describe the characteristics of themselves, their country, and their customs. Free we may be, but independent we certainly are not. We are less self contained, less self supporting, and more dependent upon others than any great nation of the past or present, and our actual and relative dependence upon others must increase year by year and decade by decade, for we

cannot go back or attempt to reverse the policy of free imports, the results and benefits of which have alone enabled a dense population of nearly 40,000,000 to be packed into these islands under conditions of comfort and improvement.

It is not a question of food supplies only. Foreign supplies and foreign raw material are now the foundation and mainspring of our huge internal fabric of industrial employment; and as these industries develop with the growth of population, they cannot become less dependent upon supplies brought to them across the sea.

For ninety years we have had command and control of the sea and its waterways; and ninety years, equal to three generations, is a long period in the life of any nation. Englishmen have thus got into the habit of regarding the free use of the sea in all times and under all conditions as an inalienable right, a heritage that is protected by some irrevocable law of trespass, and the likelihood of any interference with or loss of this power is to many minds so beyond the horizon of the possible, that it is dismissed as an unnatural contingency no more likely to occur than the destruction of these islands by earthquake.

Immunity in the past is no guarantee for the future, unless the conditions of the past and future are alike and unchangeable. That the conditions under which we gained and have retained the control of the sea have changed and are changing, is but too self-evident to all statisticians who study and digest the past and present expenditure upon the navies of the world. It therefore falls well within the province of the practical statistician to attempt in some degree to forecast and calculate how far disturbance with sea routes now open would affect the food supplies of the country, and also what proportion of the industrial population are engaged in occupations wholly or in part dependent upon imports and raw material, and how far a partial stoppage of such supplies would affect their wage earning power.

The subject to be examined divides itself into three:—

1st. The marine carrying power at present employed in the export and import trade of Great Britain, classifying the tonnage of the vessels so engaged according to nationality, dividing this classification again into steam ships and sailing ships.

2nd. The amount of articles of food now imported into this country by such tonnage, and what proportion of the total food supplies of the country such imports constitute.

3rd. To what extent the staple trades and industries of the country are affected by foreign imports, or dependent upon them for their maintenance.

The two first branches of the subject have in some shape or other been so frequently the subjects of discussion in this Society,

that they offer no special features of novelty, but the third is one of absorbing interest from an industrial, I might go further and say from a national, standpoint. So far as I know it has not been made the subject of close statistical investigation. My paper to-night makes no pretence of doing more than initiating an inquiry into and examination of this complicated and sinuous question in the hope that hereafter abler and more practised hands will follow up, test, and amplify the limited conclusions at which I have been able to arrive.

In dealing with the statistics (1) of tonnage, (2) imports of food, and (3) imports of raw material, I have been unable to adopt a synchronous year for all three sets of figures, but as the tendency of the figures I use is very unmistakeable, and their direction very clear, the argument I base upon them will in no sense be affected by the year of illustration not being identical in every case. For the tonnage statistics I have taken the year 1890, as it was with the figures of that year that Mr. Glover's paper of March, 1892, dealt, and he has so closely dissected and so ably pointed out the meaning of the returns he used, that I am glad to avail myself of his experience and unquestionable authority in utilising the figures again.

Tonnage Statistics.

For the year 1890 the total tonnage entered and cleared in the foreign trade only at ports in the United Kingdom was 74,283,000, but the total amount similarly entered and cleared with cargoes only was 62,836,000, and its distribution amongst the various nationalities was as follows (see Table IX, Glover, "Tonnage Statistics," March, 1892):—

Nationality.	Steam.	Sailing.	Total.
British.....	42,127,266	4,278,984	46,406,250
Norwegian	917,105	2,875,634	3,792,739
German	2,523,635	831,119	3,354,754
Dutch	1,645,283	123,621	1,768,904
Danish	1,029,044	456,572	1,485,616
Swedish	826,692	621,867	1,448,559
French	984,550	286,631	1,271,181
Spanish	1,114,086	40,204	1,154,290
Belgian	692,994	3,127	696,121
Russian	145,218	311,403	456,621
Italian	67,319	297,002	364,321
American	108,558	164,177	272,735
Austrian	36,833	64,081	100,914
Other countries	237,177	25,893	263,070
Total foreign	10,328,494	6,101,331	16,429,825
Total British and Foreign.....	52,455,760	10,380,315	62,836,075

It will thus be seen that of the tonnage cleared, 4,278,984 tons British and 6,101,331 tons foreign was sailing, making an aggregate of 10,380,315 sailing tonnage out of a total of 62,836,075; in other words, upwards of 16 per cent. of the sea carriage supplying us with foreign food and material is still propelled by sail power.

In speaking of our mercantile fleet, scattered all over the universe, and coming to and going from every port of consideration in the world, it must always be remembered that the proportion of it which trades between the United Kingdom and a foreign port has always to start from and return to a given centre, and that this centre is Great Britain.

Any statistician who has studied trade routes knows well that, where the current of trade is denoted by trade routes, from all parts of the world are issuing small streams of merchant vessels gradually converging closer and closer, until finally the great bulk of the carrying trade becomes a series of thickening columns which converge and meet at the entrance to the Irish and British Channels. Molestation to commerce is more apt to occur when the current of it is continuous and the course certain than where sea room is plentiful, and ships few; and this is especially the case with sailing vessels. I think we can all of us, without a great strain of imagination, depict to ourselves circumstances under which the risk to sailing vessels attempting to trade with Great Britain would be such that they would not attempt it, and be laid up. Sixteen per cent. of the sea transport now supplying our wants would at once disappear. But this reduction of sea carriage would not be confined to sailing vessels only; the steam transport would also be affected, but to what extent it is not very easy to estimate.

The diminution which would occur in the steam tonnage trading between Great Britain and foreign countries, in the event of Great Britain being a belligerent, must largely depend upon the naval strength of the enemy, or combination of enemies, with which she was fighting. But we have certain data as to the speed of much of the tonnage so engaged, and by analysing these figures, and looking to the growth in recent years of the shipping engaged in this transport, we can form some kind of an idea of what the limits of contraction would be. In the returns from the "Warships of the World," 1893, are included certain statistics as to the steam tonnage and speed of merchant vessels of different nationalities, and those belonging to Great Britain and their colonies are returned as being 7,075 in number, with a gross tonnage of 9,544,394 tons, those of the rest of the world being 5,583, with a gross tonnage of 5,720,024, and the following

table gives the number of British vessels of twelve knots and upwards :—

British Shipping. Numbers and Gross Tonnage of British Merchant Steamers of a Speed of Twelve Knots an Hour and upwards.

(Compiled from Lloyd's "Warships of the World," 1893.)

Speed.	Number of Steamers.	Gross Tonnage.
19 knots and above	19	77,303
18½	4	6,874
18	21	46,822
17½	14	66,489
17	24	40,100
16½	12	27,210
16	26	66,062
15½	13	32,222
15	51	111,188
14½	24	59,028
14	103	269,289
13½	45	116,082
13	145	356,881
12½	80	209,105
12	188	450,820
Total	769	1,935,475

Thus only 20 per cent. of our total tonnage has a speed of twelve knots and upwards, and of the remaining 80 per cent. a very large proportion must be of low speed; and the same estimate applies to foreign steamships. According to Mr. Glover's paper, the amount of steam tonnage of all nationalities entered and cleared in 1890 in the British ports in foreign trade alone was 52,455,760, having risen from 32,121,056, the amount cleared in 1880, being an increase of 20,334,704 in a decade. Now, assuming that we were to retain 50 per cent. of this vast increase in war time, and that our clearances were not affected to a greater extent by any combination against us, we have a reduction of about 10,000,000 tons on a total of 62,836,000 tons, being equal to a fall of 16 per cent. This, together with the fall of 16½ per cent. in the sailing clearances, makes a total reduction of over 32½ per cent., or nearly a third of our total clearances. I make this the estimate of reduction which I shall apply to the figures in the remaining part of the paper, as being not unlikely to occur at the beginning of a war if the command over the sea was intermittent and imperfect.

Imported Supplies of Food.

The development of the supplies of food from abroad during the last twenty years has been so steady and continuous, that it is

not generally realised how great a revolution has in that period been effected by the greatly extended area from which our food is drawn, and the annually increasing proportion which foreign imported food bears to home produce.

Dividing the main necessities which are obtained from foreign and home sources of life into three heads—1, meat; 2, butter, margarine, cheese, and eggs; and 3, flour and other forms of corn and meal—the following heads give the actual increase in value since 1871 of the imports of these items of food:—

	Import of Meat, &c.		
	1871.	1881.	1891.
	£	£	£
Cattle and beef	4,218,000	8,915,000	14,270,000
Sheep and fresh mutton	1,790,000	2,192,000	4,082,000
Pigs, bacon, ham, and pork	3,710,000	11,493,000	10,042,000
All other forms of meat	770,000	2,154,000	713,000
	10,488,000	24,754,000	29,107,000
	Import of Butter, &c.		
	1871.	1881.	1891.
	£	£	£
Butter and margarine	6,939,000	10,866,000	15,149,000
Cheese.....	3,341,000	5,245,000	4,813,000
Condensed milk.....	—	—	900,000
Eggs	1,264,000	2,322,000	3,506,000
	11,544,000	18,433,000	24,368,000
	Import of Wheat, &c.		
	1871.	1881.	1891.
	£	£	£
Wheat and flour	26,817,000	40,737,000	39,633,000
Maize	6,469,000	10,408,000	8,412,000
All other corn and meal	9,495,000	9,711,000	13,977,000
	42,691,000	60,856,000	62,022,000
Grand total.....	64,723,000	104,043,000	115,497,000

(*Note.*—These figures and the following tables are all taken from the tables in “General Report,” pp. xviii—xxviii, of “Agricultural Returns, 1892.”)

These statistics show a rise in the value of these articles of imported food in twenty years of from 64,713,000*l.* to 115,487,000*l.* The constant fall in the price of the articles makes any money value, taken on the prices current in the year, a delusive test as to the real increase of the amount of food thus imported.

Taking the quantities imported, and estimating them for each of the years on that basis, we get the following results:—

	1871.	1881.	1891.	Percentage of Increase between 1871-91.
	Tons.	Tons.	Tons.	
Live animals, representing	90,500	117,500	171,500	89·5
Dead meat	99,500	341,600	489,500	392·0
Butter, margarine, and cheese	127,500	194,500	270,500	112·1
Wheat.....	1,969,500	2,857,500	3,315,500	68·3
Flour	199,000	568,000	836,000	320·1
Maize	841,000	1,674,000	1,341,000	59·5
Other corn and meal.....	1,188,000	1,232,500	2,072,000	74·4

In the same report the Board of Agriculture affords data for estimating the changes in the home production of food in the United Kingdom, by giving the areas under cultivation and grass and the numbers of cattle and sheep.

	1872.	1882.	1892.	Percentage of Increase or Decrease between 1872-92.
Cultivated area.... acres	46,869,000	47,655,000	47,978,000	+ 2·3
Corn crops	11,698,000	10,620,000	9,329,000	- 20·2
Wheat crops	3,840,000	3,164,000	2,299,000	- 40·1
Permanent grass ..	22,838,000	24,963,000	27,533,000	+ 20·5
Cattle	9,719,000	9,832,000	11,519,000	+ 18·5
Sheep.....	32,247,000	27,448,000	33,643,000	+ 4·3

(It will be observed that the years taken for estimating food imports are 1871, 1881, and 1891; for estimating home production, 1872, 1882, 1892.)

The population of the United Kingdom was—

	1871.	1881.	1891.	Percentage of Increase between 1871-91.
Population No.	31,556,000	35,208,000	38,109,000	20·7

Taking the last three tables, viz., (1), that referring to the imports in bulk of these classes of foreign food; (2), to the home production of the same food; (3), to the growth of the population, we arrive at these conclusions—that foreign imported food produce has increased enormously, about 88 per cent.; that the home production of food has been practically stationary; and that the growth of the population during the same period has been at the rate of 20·7 per cent.

The ratio of increase of foreign food, as shown by these tables, has therefore been much in excess of the ratio of increase of the

population it supplied, and it consequently follows that at the present rates of consumption a much larger proportion of the whole population are now dependent upon foreign food than was the case twenty years back. Side by side with this change, due to external influences, internally a movement in population is taking place which adds to our dependence on foreign supplies. Although the population of Great Britain and Ireland has in the aggregate increased largely since 1851, the increase has been entirely confined to Great Britain, the Irish population having receded from 6,552,385 in 1851 to 4,704,750 in 1891. But in Ireland the food supplies of the population are, to a much larger degree than in Great Britain, derived from home produce, and thus we have that part of the kingdom which is most self-supporting, so far as home-grown produce is concerned, decreasing in population, whilst those parts which are most dependent upon external food supplies increasing in population.

I have, however, hitherto only considered these articles of imported food which compete with home produce, but there are other articles, such as tea, coffee, sugar, and tobacco, which may fairly be termed necessities of life, but the whole supply of which comes from abroad. The importation of these articles has increased, as shown in the following table:—

Imports of Tea, Coffee, Sugar, Tobacco, 1881 and 1891. Home Consumption.

[000's omitted.]

	Tea.	Coffee.	Sugar.	Tobacco.
	lbs.	lbs.	cwts.	lbs.
1881	160,226,	31,208,	20,016,	49,330,
'91	202,456,	28,622,	27,407,	60,930,

What ratio foreign imported food bears to home produce formed part of a very interesting paper read by Mr. Stephen Bourne on the 30th November, 1892, before the Manchester Statistical Society, in which he, from tables of comparison between the years 1876 and 1891, arrived at the following conclusions: that out of 33 millions of inhabitants in 1876, 18 might be deemed to be provided from home sources, and 15 from foreign supplies; but that in 1891, out of 38 millions of inhabitants, 16½ depended on home and 21½ on foreign supplies, or in other words that in 1891 55 per cent. of the food at present consumed in this country came from abroad. On that estimate every inhabitant in these islands is dependent for his food for one hundred and eighty-nine days in the year upon foreign imports, and if these imports suddenly ceased he would be foodless for over six months in the year.

Foreign food supplies have during the last twenty years gradually obtained this preponderance because, as preceding tables have shown, home grown food has almost reached its full limits of remunerative production, and the increasing powers of consumption of a growing population had to be almost entirely met by extraneous supplies. This process must continue, and if its development during the next twenty years is as rapid as it has been in the past, in little more than twenty years hence home produce will have receded from being less than a half of the total supply of food to less than a fourth.

Whatever danger, therefore, a temporary stoppage or dislocation in the transport of our system of sea borne food might now produce, will be aggravated as time rolls on.

I have assumed that about one-third of that transport might be summarily curtailed or arrested, and if one-third of a food supply which feeds every individual in the country for one hundred and eighty-nine days be stopped, the whole population would be for sixty-three days foodless.

If such a catastrophe were to occur, it would be beyond the power of any statistician to in any way gauge or estimate the amount of misery, suffering, and destitution which such a want of daily sustenance would entail.

A temporary stoppage of ocean highways would not only curtail the automatic supplies of food upon which this country relies, but a large and corresponding diminution must also occur in the carriage of the raw materials and foreign supplies which feed our industries and great trades.

A sudden rise in the price of the necessities of life is, to a dense population, a terrible hardship; but if a great rise in the price of the articles to be purchased is associated with a corresponding fall in the purchasing power of the buyer, the hardship rapidly assumes the form of a wide-spread and immediate famine. Simultaneity in a wholesale scarcity of food, and a general lack of employment is, however, the certain result of our increasing dependence upon foreign supplies for the sustenance of our population and for the maintenance of their industries, and the extent to which the wage-earning power of our industrial classes depends upon the communication by sea remaining undisturbed, will now be statistically examined.

Imported Supplies of Raw Material other than Food, and the Dependence of the Industries of the Country thereon.

This part of the inquiry necessitates a much closer investigation than the preceding portions of my paper if the immediate, inter-

mediate, and final effects of vast imports of raw material are to be traced right throughout the windings and intricacies of our complex industrial system. I can only liken the work of trying to follow out such statistics to an effort to catch diving ducks, the nearer you get to them the more certain they are not only to disappear, but also to reappear in quarters where you least expect them.

Though I am conscious that in this part of the subject my work is crude and unfinished, still the meaning of the figures which I propose to here use, is as clear and unmistakable as those I have disposed of. They admit of but one interpretation, the increasing dependence of our industries upon foreign supplies. Such being therefore the statistical drift of the tables I am about to employ, I have been most anxious to understate rather than overstate the case I am presenting. What effect the sudden stoppage of material from abroad would have on the industries for whose wants it was required, is in almost every case regulated by the nature of the individual industry itself. In some instances the foreign material is required for mixing and blending with the native, as in the case with imported iron ore and wool, and a sudden stoppage of one ingredient essential to the manufacture of the whole commodity, would damage and disorganise the industry to an extent much beyond the mathematical proportion which the imported material bears to the whole material used by that industry. In other trades, such as those connected with wood and leather, the bulk of the raw material imported is very similar in quality and substance to the raw material produced from home sources, and in these cases the disturbance due to their contraction and stoppage might be only proportional to the ratio they bear to the total material consumed by the trade affected. I have assumed throughout that the dislocation and contraction of employment from decrease of imported material in all industries and trades, will be only proportional, though it must be manifest that in most cases this is an underestimate.

The figures which I propose to use are the Board of Trade returns for 1892. I have selected that year for two reasons: first, because it is an average year, being one between a period of expansion and a period of depression. Taking the ten years preceding, I find that, as regards its imports and exports, the year 1892 represents the average of that decade, being below the volume of five years and above that of the remaining five. It is also the latest year the figures of which have been thoroughly classified and analysed.

The ten trades which I propose to select by way of test and illustration are:—

- | | |
|---------------------------------|-------------------------------|
| 1. The steel and iron trades. | 6. Hides and leather. |
| 2. Wool and worsted. | 7. Wood and timber. |
| 3. Cotton. | 8. Bristles and brush making. |
| 4. Flax. | 9. Silk. |
| 5. Gutta percha and caoutchouc. | 10. Hemp and jute. |

These industries divide themselves into three classes: (1.) Those which are indigenous, and established in consequence of the proximity of raw material, such as steel, wool, flax, leather, wood. (2.) Those which have been artificially created from superiority of means of manufacture and transport, and entirely dependent on foreign supplies, such as silk, cotton, and jute. (3.) Those inseparable from the wants of a civilised community, such as brushmaking, and the manufacture of gutta percha goods.

The headquarters of these industries are scattered all over the kingdom. Some are inland, some on the seaboard, some in Ireland, some in Scotland, and they differ much in the nature of the employment they give, in the class of workmen they engage, in the amount of the wage they distribute. Outwardly there is little or no connection between them, but I will show that one and all have a common interest in what is the origin of their prosperity and existence: free access to the ocean highways.

Iron and Steel Trade.

For the year 1892 the total home production of iron ore (according to the "Mineral Statistics of the United Kingdom" for 1892," p. 42) was 11,312,675 tons, and the imported supply 3,780,505 tons. Imported ore therefore stands to total production at the rate of 1 to 4, or 25 per cent. of the total amount raised. The number of persons engaged in those industries directly dependent on steel and iron, according to the census returns of 1891 (see Table A), is 938,448. The proportional number of persons whose employment depends on imported supplies of foreign ore is 234,612.

This industry has in recent years greatly changed its character, owing to the cheap and rapid processes of converting iron into steel. Foreign ore is required in most of the processes to be blended and mixed with the native ore.

Wool and Worsted Imports, Alpaca, Goats' Hair, and Yarn.

The home production, in 1892, of raw material for this industry was estimated at 153,000,000 lbs. (Messrs. Helmuth, Schwartz and Co's. Annual Report on wool, 1892), and the net imported supply (including yarn), after the re-exports have been deducted, 329,644,000 lbs., or 68·5 per cent. of the whole production. The number of persons occupied in industries connected with wool and

directly dependent on wool number 301,249, and the proportion to whom the foreign raw material gives employment is 206,356.

Cotton.

This industry is entirely dependent upon imported foreign raw material, which (including yarn, but excluding re-exports) amounted in 1892 to 13,851,000 cwts. 670,191 persons obtain, in one shape or another, employment from this industry, and the whole of them are entirely dependent upon sea-borne cotton.

Flax (including Tow, Linen, and Yarn).

The imported raw material, including yarn, for this industry was 1,915,000 cwts.; the home produce only 194,000 cwts., or only 9·2 per cent. of the whole amount consumed. The industry employs 122,992 persons, of whom 113,029 are dependent for their livelihood on foreign material. Home produced flax shows a rapid fall in 1891 and 1892.

	Acreage.	Produce.
		Tons.
Average 1882-90	109,901	19,312
„ '91	74,665	13,763
„ '92	70,647	9,691

Gutta Percha and Caoutchouc.

This small but most essential industry employs 25,557 persons, the whole of the raw material used coming from abroad. The whole of the *employés* of the trade are dependent upon foreign material for their employment. Many other industries would be affected by a failure in the supply of gutta percha, notably machine makers and electricians, and a collapse in this industry would cause a disturbance among other trades out of all proportion to the numbers it employs or the dimensions of its own particular business.

Hides and Leather.

In this industry the import of raw material in the shape of hides, which are converted into leather here, and the import of manufactured leather must be taken together, for they form in the aggregate the source of supply to the whole leather and boot trade of the country. It has been difficult to obtain statistics as to the home production of hides, but eminent members of the trade state that the home production is much less than the amount imported from abroad. Assuming, which seems a fair estimate, that home produced hides constitute one-third of the total amount converted

in this country into leather, two-thirds of the raw material here made into leather comes from abroad. The manufacture of home made leather is estimated to be about equal to and slightly in excess of the amount imported from abroad; it follows therefore that five-sixths of the leather used in this country comes either in the shape of raw material or manufactured leather from abroad. The number of persons engaged in this industry is 364,755, of whom 83 per cent., or 302,746 are dependent for their daily wages upon imported supplies of hides and leather.

The centres of the boot trade are in the midland counties, remote from the sea, and at first sight little affected by maritime questions. Yet there is hardly an industry, excepting cotton, the members of which would be so injured by a stoppage of our great sea trade routes, as the boot and shoe trade in the centre of England.

Wood and Timber.

The total consumption of wood and timber in 1892 is estimated at 535,000,000 cubic feet, of which 395,000,000 cubic feet were imported from abroad, or 75 per cent. of the whole. The number of persons engaged in trades and industries is estimated at 395,386, of whom 296,569 are dependent upon foreign imports.

Bristle Trade and Brush Making.

The bristles used for making brushes to a very large extent come from abroad. In this small but most necessary industry 17,702 are employed. It is difficult to accurately estimate how many are dependent upon foreign imports for the raw material they work up, but according to the best information I have been able to obtain, at least 80 per cent. of this number would be thrown out of employ by a stoppage of our imports.

I selected this industry as I considered it a typical one. There are many similar trades, where products are accepted as an automatic supply to the wants of a civilized community, but how the raw material is obtained which alone maintains the trade few care to investigate.

Silk.

The whole of the raw material employed in this industry comes from abroad. It employs 55,888 persons, all of whom are dependent for the wages on foreign supplies.

Hemp and Jute.

This trade is in the same category, and it employs 60,539 persons, who are in a similarly dependent position.

Summary of Results arrived at.

Summarising the results thus obtained in the subjoined table, we find in Col. 4 the total number of persons employed and dependent on these selected trades, and they amount to 2,952,707. Col. 5 shows that of this number no less than 1,980,068 are dependent for their livelihood upon open sea highways.

TABLE A.—*Loss of Employment by Stoppage of Import of Raw Material alone (United Kingdom).*

Description of Raw Material.	(1) Home Production.	(2) Imported Supply.	(3) Proportion of Imported to Total Produc- tion.	(4) Number of Persons Employed in directly Dependent Industries, according to Census.	(5) Proportional Number of Persons whose Employment Depends on Imported Supply.*
1. Iron ore tons	11,313,000	3,780,000	25.0	938,448	234,612
2. Wool and worsted (including alpaca, goats', and yarn) } lbs.	153,000,000	329,644,000	68.5	301,249	206,356
3. Cotton (raw) cwts.	—	13,851,000	100	670,191	670,191
4. Flax (including tow and linen yarn) } "	194,000	1,915,000	90.8	122,992	111,678
5. Gutta percha and caoutchouc } cwts.	—	318,000	100	25,557	25,557
6. Hides and leather "	?	1,856,000	83	364,755	302,746
7. Wood and timber cub. ft.	140,000,000	395,000,000	75	395,386	296,569
8. Bristles lbs.	—	3,000,000	90	17,702	15,932
9. Silk (raw, knubs, and thrown) }	—	7,202,000	100	55,888	55,888
10. Hemp, jute, and cordage } value. £	—	6,991,000	100	60,539	60,539
Total.....	—	—	—	2,952,707	1,980,068

* Taking as basis the proportion of imports to total supply shown in Col. 3.

Census (1891) Figures of Numbers Engaged in different Industries.

Class of Occupation.	England and Wales.	Scotland.	Ireland.	United Kingdom.
<i>a.</i> Classes included in Table A—				
Workers in iron and steel	776,731	132,661	29,056	938,448
Wool and worsted	254,585	40,034	6,630	301,249
Cotton	629,184	36,728	4,279	670,191
Flax	8,166	26,223	88,603	122,992
Silk	51,427	4,132	329	55,888
Hemp, jute, and cordage	22,416	36,297	1,826	60,539
Hides and leather	311,961	27,393	25,401	364,755
Wood and timber	309,729	54,518	31,139	395,386
Gutta percha and caoutchouc	22,136	3,314	107	25,557
Bristles	15,852	1,144	706	17,702
Total.....	2,402,187	362,444	188,076	2,952,707

Now if one-third of the supplies coming from abroad were stopped no less than 660,000 persons would be without wages; or if the whole of those now engaged in those industries were employed on short time, they would have their present time reduced by one-third.

But this, so far from exhausting the reduction of wages in these industries caused by a block in our sea routes, only touches the first of the trades upon which many other industries and occupations are almost entirely dependent. I have in the subsequent return included some few of the dependent industries and the numbers they employ. This list only notices a few of the larger subsidiary or dependent occupations, and is far from exhaustive, still it mounts up to the great figure of 1,330,000 persons.

Class of Occupation.	England and Wales.	Scotland.	Ireland.	United Kingdom.
<i>b.</i> Other large occupations seriously affected, but not included in Table A—				
Cabinet makers, upholsterers, &c. (11, 2, 1)*	91,361	11,930	2,322	105,613
Mixed or unspecified textiles (17, 5).....	162,811	63,136	28,217	254,164
Tailor (18, 1, 3).....	208,720	27,320	17,950	253,990
Milliner, dressmaker (18, 1, 4)	420,431	56,227	46,787	523,445
Shirt maker (18, 1, 6)	55,096	7,020	64,214	126,330
Hosiery manufacturer and hosier (18, 1, 7 and 8)	61,568	3,863	759	66,190
Total.....	999,987	169,496	160,249	1,329,732

* See note * on p. 127.

But in addition there are those employed in the work of transporting and distributing the products of manufacture and industry. It is difficult on this point to give anything like a complete estimate of those thus employed, but Mr. Goschen, as Chancellor of the Exchequer, in speaking on the budget 11th April, 1892, alluded to the dimensions of the work of distribution as shown by income tax returns under Schedule D, as compared with production. "It is easy to leave out of account the immense profits of the distributors of the manufacturing and productive industries. If I take the total of these latter industries, including cotton, silk, wool, ready made clothing, metals, and hardware of all kinds, ship building, refining, tanning, brewing, chemicals, distilling, and so forth. If I take the whole of these industries which cover so vast an area of our national prosperity, the profits only amount to one-half of the profits which fall under the head of distribution and transport. That is to say, that

“those who distribute and transport merchandise and the products of industry, make on the whole twice as much profit as the producers and manufacturers of the articles.”

Excluding those employed by railways and the great bulk of the small retailers, I find that the following classes would be affected by the disturbance I contemplate :—

Transport.

Class of Occupation.	England and Wales.	Scotland.	Ireland.	United Kingdom.
Carman, carrier, waggoner, &c. } (6, 2, 4)*.....	170,256	26,527	7,386	204,169
Dock labourers (6, 3, 4)	54,996	6,789	4,322	66,107
Bargeman, lighterman, &c. } (6, 3, 2)	31,496	560	1,046	33,102
Merchant service (6, 3, 3)	107,834	18,085	9,809	135,728
Total	364,582	51,961	22,563	439,106

* See note * on p. 127.

The census of 1891 gives the grand total of the industrial and commercial classes throughout Great Britain and Ireland as numbering 10,689,000, yet this perfunctory examination I have made of some of the great trades, gives the appalling total of 4,721,545 persons in the first instance whose employment in connection with these ten trades is directly or indirectly affected by stoppage of raw materials on the high sea. Besides these there are the women and children (not engaged in any occupation) dependent on those employed in these trades. Let this stoppage of work be associated with a sudden rise in the prices of necessities, and the elements are complete for wholesale calamity and disaster.

Comparison between 1881 and 1891.

Let us now compare the imports of raw material for these same industries in 1881 and 1891, and the numbers engaged in each, and see to what extent our relative dependence on foreign material has in that interval increased, as shown by the tables below :—

Imports of Raw Materials into United Kingdom in 1882 and 1892, and Numbers Employed in Industries Dependent on these Materials in 1881 and 1891.

Description of Raw Materials.		Imports, 1882.	Imports, 1892.	Number Employed, 1881.	Number Employed, 1891.
	Quantities.				
1. Iron ore	tons	3,284,946	3,780,503	758,049*	938,448
2. Wool and worsted (in- cluding alpaca, goats', and yarn)	lbs.	517,594,676	778,123,176	276,612	301,249
3. Cotton (raw)	cwts.	15,794,566	15,850,324	632,581	670,191
4. Flax (including tow and linen yarn)	"	2,010,765	1,915,664	119,951	122,992
5. Gutta percha and caout- chouc	"	254,662	317,660	8,588	25,557
6. { Hides, raw, dry, and wet....	"	1,190,667	909,477	11,373	11,431
Leather	"	671,588	967,738	320,475	353,324
7. Wood and timber		6,320,863	7,696,000	396,544†	395,386
8. Bristles	lbs.	2,563,075	3,001,385	17,472	17,702
9. Silk (knubs and waste, } raw and thrown)	"	8,630,350	7,201,964	67,359	55,888
10. Hemp, jute, and cordage	value. £	7,130,101	6,991,231	46,490	60,539
Total		—	—	2,655,494	2,952,707

* Shipwrights (iron) not included.

† Shipwrights (wood) not included.

On perusal of this table it will be seen that, though in the aggregate the amounts imported in 1891 are considerably above those of 1881, yet the ratio of increase is small compared to that of food for the same period. The raw materials connected with the iron, wool, and wood trades show considerable rises; in the minor industries the amounts of bristles and gutta percha imported have considerably increased, but the leather trade is almost stationary; so is cotton, whilst flax, hemp, jute, have gone back. On the other hand, the number employed in every industry has risen, except silk and wood.

A perusal of these figures seems to show that the increase of population, viz., 8·2 per cent., during the last decade, has been accompanied, so far as the industries here mentioned are concerned, with a corresponding development of employment, and it is clear therefore that if these industries are to grow and give more employment, their ratio of dependence upon sea supplies must steadily get greater.

It is impossible to leave the figures relating to imported food and imported raw material without a sense of apprehension and disquietude at the tremendous magnitude of the stake this country has in keeping free and open the trade routes of the sea. Heavy and unpleasant as may be the stake now, it must in the future

grow greater and greater. We are in the position of a man forced to gamble, and to continually increase his stakes, not because he likes gambling, but because he cannot stop without starvation and ruin.

It is a curious irony of events that the least excitable and most practical of the nations of the world should be forced into this huge and ever growing speculative risk, but we have now no alternative but to go on with what has been forced on us, but at the same time to minimise by prescient and never relaxing precautions the peril which must ever surround us.

Transfer of Flag.

It may be noticed that, in making these estimates of the contraction of our sea carrying power in certain eventualities, I have ignored and not taken into consideration the relief which many believe may be given by transfer of ships from our flag to that of some neutral power. It is maintained in certain quarters that this transfer will assume very large dimensions, and so doubtless it might if such a transaction in itself would give to a British shipowner and a British ship certain immunity and protection against the risks and molestation of war. But we have had a long and unvarying practical experience on this point. From 1698 to 1815 this country was six times engaged in serious war; in fact, during the greater part of that period it was at war, and the war, in almost every case, was fought out as much on sea as on land.

The following are the dates and duration of each of these six wars:—

1702 to 1712	1756 to 1762
'18 „ '21	'75 „ '83
'39 „ '44	'94 „ 1815

and the result of this long and painful experience has been to make clear beyond controversy that a neutral flag is not in itself sufficient protection to neutral merchant vessels trading to the ports of a belligerent, unless the neutral has behind it a navy strong enough to ensure respect for that flag.

It would be altogether outside the scope of this paper and of the regulations of the Society for me to now attempt to argue this question at length, or even by my statements to provoke any discussion upon it, but I must briefly give my reasons for believing that for the subjects of the greatest naval power in the world to solicit the protection of a neutral flag to give to their property immunity from the risk and molestation from war, is too empirical a safeguard to set on one side facts and statistics based on experience. Wars break out suddenly, and sometimes without premonitory

symptoms, and the early stages of a naval war are the most dangerous to a widespread commerce, for it is before the defence is adapted to the new condition of things that most risk would arise and rates of insurance be highest. It is a curious, but at the same time a significant fact that the countries to whose flag transfers can be easiest made, and whose laws impose fewest formalities to such a transfer, are those whose navies are least powerful. Moreover it is a statistical fact that all the neutral powers in the world, if they combined together, could not man half the British mercantile marine, unless they laid up their own merchant vessels.

But above these considerations arises a much more difficult and undefinable question. What articles are or are not contraband of war? Is food? A great naval power in conflict with a weak naval power only nine years ago did so declare itself, "on the ground" that by the side of those articles included from their very nature "under contraband of war, such as arms and munitions, there are" others the trade in which may be incidentally prohibited in "time of war, by reason of their usefulness to the belligerents." (Circular of French Government, 21st February, 1885.)

Those who wish to get a side light from a strong and impartial authority upon this subject, should read an article, written by Mr. T. Russell Solby, Assistant-Secretary to the United States Navy, in "Scribner's Magazine" (November, 1889), and I think they will all concur in believing that what hereafter under a neutral flag will be treated as contraband of war, almost entirely depends upon the respective powers of the belligerents themselves.

I only refer to these matters not to provoke reply or argument on this point, but merely to justify myself in refusing to allow the idea of transfer from one flag to another to invalidate the statistical conclusion I am endeavouring to establish.

Conclusion.

Before I conclude this paper, I wish to explain that, in calling the attention of this Society to the increasing dependency of this country upon its foreign trade for its food supply and the maintenance of its industries, I neither wish to find fault with what has been done in the past or to advocate the reversal of that policy in the future. My object in asking you to statistically discuss and examine our present position is to utilize the great authority and influence this Society has with the general public, in order that, with increased wealth and improved food supplies, we may combine a full knowledge of the sources from which we obtain these benefits and of the means by which, in emergencies, the sea routes through which they come may be kept open and free.

Risk is coincident with life, and no nation, be it island or insular, has not always attached to it some kind of danger and drawback. The sword that hung over the head of Damocles was dangerous because it was only held up by a single hair; if it had been restrained by a good substantial chain, posterity would have heard very little of his ever present anxiety. I want this Society to first examine from their own standpoint, viz., that of statistics, whether there is or is not such a sword hanging over our food supplies and our industries, and if they arrive at the conclusion that some such peril can be proved by the stern and inexorable figures of economic science, then to utilise their statistical knowledge to show how such a danger can be reduced and safeguarded.

The prosperity and well being of a great nation are like the business and property of a great corporation or firm; they must be insured against certain risk, and the premium which is annually paid against that risk must be regulated largely by the value of the property to be protected, and as that property grows in value and bulk so must the premium be increased.

I only ask you as statisticians to look in the same light on the problem I have ventured to discuss, and to remember that the annual insurance which we should pay to keep open the ocean highways, must not merely be regulated by the value of the commerce or merchant fleet that comes by those routes, but by the knowledge that the freedom of sea communications between Great Britain and the outer world is as essential to her existence as the passage of air through the windpipe of any human being is to the preservation of his life.

Before I sit down, I should like to express my thanks for the great assistance that I have received from the Honorary Secretaries, Assistant - Secretary, and Chief Clerk of the Society in the preparation and compilation of the figures contained in this paper.

APPENDIX.

Details of Occupations of Persons Dependent on Supply of Raw Material.

Occupations.	England and Wales.		Scotland.		Ireland.		United Kingdom.	
	1881.	1891.	1881.	1891.	1881.	1891.	1881.	1891.
<i>Iron Ore—</i>								
Workers in iron and steel (21, 8*)	361,343	380,193	62,594	68,040	21,078	20,797	445,015	469,030
Shipwrights, iron (13, 1, part)	—†	54,307	—†	13,195	—†	—†	—†	67,502
Machines and implements (10, all)	267,976	342,231	38,600	51,426	6,458	8,259	313,034	401,916
<i>Iron Ore—Total</i>	629,319	776,731	101,194	132,661	27,536	29,056	758,049	938,448
<i>Wool and Worsted</i> (17, 1)	233,256	254,585	35,646	40,034	7,710	6,630	276,612	301,249
<i>Raw Cotton</i> (17, 3, excluding flax)	574,405	629,184	51,332	36,728	6,844	4,279	632,581	670,191
<i>Flax</i> (17, 3, part)	12,065	8,166	28,733	26,223	79,153	88,603	119,951	122,992
<i>Gutta Percha and Caoutchouc—</i>								
Bicycle maker (12, 1, part)	1,072	11,524	13	142	1	62	1,086	11,728
India-rubber worker (20, 1, part)	6,548	10,612	924	3,172	30	45	7,502	13,829
<i>Gutta Percha and Caoutchouc—Total</i>	7,620	22,136	937	3,314	31	107	8,588	25,557
<i>(a.) Hides—</i>								
Tanners, fellmongers (19, 2, part)	10,248	10,348	816	8	309	265	11,373	11,431
<i>(b.) Leather—</i>								
Saddler, harness maker (12, 2)	23,866	27,321	2,150	2,382	2,812	2,883	28,828	32,586
Shoemaker, &c. (18, 1, part)	216,556	243,789	24,371	21,749	26,791	21,506	267,718	292,044
Currier and leather goods maker } (19, 2, part)	20,891	25,503	2,287	2,444	751	747	23,929	28,694
<i>Leather—Total</i>	261,313	—	28,808	—	30,354	—	320,475	353,324
<i>Wood and Timber—</i>								
Workers in wood and bark (20, 3)	75,338	76,755	13,460	14,528	7,972	7,315	96,770	98,598
Carpenters and joiners (11, 1, part) ...	235,233	221,009	35,352	31,402	25,373	23,668	295,958	276,079
Wood carvers (11, 3, part)	3,108	3,555	504	702	204	156	3,816	4,413
Shipwrights, wood (13, 1, part)	—†	8,410	—†	7,886	—†	—†	—†	10,296
<i>Wood and Timber—Total</i>	313,679	309,729	49,316	54,518	33,459	31,139	396,544	395,386
<i>Bristles—</i>								
Hair, bristle worker, and brush, } broom maker (19, 3, part)	15,855	15,852	954	1,144	983	706	17,472	17,702
<i>Silk</i> (17, 2)	63,577	51,427	3,163	4,132	619	329	67,359	55,888
<i>Hemp, Jute, and Cordage</i> (17, 4)	22,471	22,416	22,056	36,297	1,963	1,826	46,490	60,539

* These figures refer to the Order and Sub-Order in the Classification of the Occupations in the Census returns, 1881 and 1891.

† Shipwrights in iron and wood not distinguished. The comparison of *all* shipwrights is as follows:—

	1881.	1891.
England and Wales	45,671	62,717
Scotland	16,663	21,081
Ireland	2,532	4,017
United Kingdom	64,866	87,815

DISCUSSION *on* LORD GEORGE HAMILTON'S PAPER.

THE PRESIDENT said that whereas statistics had often been placed before the Society showing the increasing prosperity of the country, this paper pointed out the dangers attending that prosperity. His personal position was that of a shipowner, and he had been much struck with what Lord George Hamilton had said concerning the neutral flag. Probably he was right in the view he had taken of the impossibility of transferring our merchant vessels to a neutral flag, but even if it were practicable, it was at best a disheartening way of keeping our trade. Was it not possible to find some other method than the old one of convoys, by which our merchant ships might be protected in time of war? Could not the steamers—sailing and acting together—to some extent protect themselves by exercising those latent powers of collision which they all possessed? The actual losses which privateers or cruisers could inflict upon us would not be so serious in themselves as the demoralisation arising from the fear of them. We could perfectly well afford those losses if they were borne *jointly*, and it was while we were still at peace that this question must be carefully considered. He felt sure that shipowners would be patriotic enough to be ready to meet the authorities in attempting to make some such arrangement, and if it were made, it would stimulate the efforts of the crews as well as of the owners in maintaining our trade.

Sir JOHN C. R. COLOMB emphasised the paramount national importance of this question, and its ever growing proportions. Lord George Hamilton had confined his inquiry to Great Britain, but the student would not be able to follow it up without some reference to the dependencies of the United Kingdom. There was one governing consideration which had an important bearing on this matter, and that was the automatic suspension of foreign business preceding all warlike operations. If, for instance, France or Russia were to declare war against us, the whole of our trade with those two countries would be immediately stopped. Any calculations as to the percentage of probable reduction in our trade due to actualities of war operations must therefore be made on the reduced tonnage, *i.e.*, after deducting from the whole tonnage that part of it which was employed in the French or Russian trade. He agreed that the sailing ships would all be immediately laid up, and he could cite an example from the American civil war. When it was known in the eastern hemisphere that the “Alabama” was cruising between the West Indies and the Cape, seventeen American clippers, aggregating over 12,000 tons, were at once laid up in one port alone (Singapore). He did not think it possible to draw a line between fast and slow steamers, a good deal depended, amongst other things, on the coal-carrying capacity of the indi-

vidual steamer, enabling her to make *détours* out of the beaten track. The automatic suspension of trade was very important, and would be found to vary with the quarter from which the war came. For instance, a war with France would not throw any ocean steamers automatically out of employ, but a war with America would. There would be no automatic reduction of our trade with our own empire, and we did more trade with our own empire than with any foreign country, and each part of the Empire did more trade with England than with any foreign country. An interesting case of the automatic effect of a war on food supply would be found in a paper in the Society's *Journal* for 1863. Another important consideration was that, apart from the growth of our dependence on foreign imports, the geographical distribution of the sources of our supply had changed during the last twenty years. Our supply came now from much further afield, and consequently required protection over greater distances. While in 1871 53 per cent. of the 26,000,000*l.* worth of wheat and flour imported came from Europe and the Mediterranean ports, the proportion had fallen in 1891 to only 24 per cent. on a value of 31,000,000*l.*; the remaining 76 per cent. being brought from Asia, America, and Australasia.

Another very important element which exercised its influence on the whole social condition of the country, was the margin of profit. Manufactories would be shut up and employment cease if there were no profit and no prospect of profit. Whether coincident or not with our increased dependence on the sea, it was very generally conceded that the margin of profit had shrunk between 1871 and 1891. The effect of any interference with our lines of supply would increase the cost of raw material, the freights, and the insurance, and this extra cost must fall first of all on the margin of profit. The extinction of this margin, combined with a rise in the price of bread, would have a very far reaching effect. Inefficient means of defence for our ocean communications in time of war meant a simultaneous and universal closing of factories in Great Britain, an unemployed population in our streets, and dear bread in our shops. They had once before had a terrible practical lesson at Manchester what the restricted import of the single article of cotton meant. Professor Leone Levi in 1863 estimated that at that time "400,000 persons were thrown out of employment and forced to depend upon the charity of their fellowmen for their sustenance."

Lord George Hamilton had not considered the exports of coal. These amounted in 1851 to 3,500,000 tons, and in 1891 to over 30,000,000, and this proved the growing dependence of the coal miners (numbering 650,000) on delivery by sea. The distress and disastrous effects caused by the recent strike of coal miners were as nothing in comparison with what would follow a serious interruption of our ocean communications.

With regard to the transfer of our flag, he would point out that to depend on a neutral flag to carry on our commerce during war, was to depend on our being able to get rid of our shipping at a moment's notice. Suppose that at the end of an unsuccessful war

we were called upon to hand over our mercantile marine to a victorious enemy, who would then doubt that Britain's sun had set? But a voluntary transfer would simply be commencing the war by levying this gigantic requisition on ourselves in the form of a forced sale, for no belligerent would recognise a fictitious transfer. It would be giving away our merchant fleet with a pound of tea.

Sir RAWSON W. RAWSON said that the importance of this paper could not be over-estimated, and that immediate action should be taken with regard to the facts now brought clearly before the public. It was by no means necessary that the extreme mischief mentioned by Lord George Hamilton as possible should operate: a partial stoppage of our sea-borne trade would be quite sufficient to cause incalculable damage. In support of this view he could quote the instance mentioned by Sir John Colomb. The price of cotton just before the American civil war was 3*l.* per cwt., two years later it was 13*l.* per cwt.; and the immense damage to our cotton industry during that period had been caused, not by an enemy at our doors, but by a civil war 3,000 miles away, producing only a partial stoppage of the supply of our raw material in that one branch of our national industry. Food and raw materials formed five-sixths of all our imports. It was not necessary to go the length of the author, and assume that one-third of our imports would be stopped. If war risks, war freights, and war insurance, were added to the cost of our food and raw materials, they would be quite sufficient to bring universal calamity on the empire.

Had we been an island in the midst of the ocean, all our coasts would have been open, and no hostile fleet would have been able to shut up all our ports; but as a matter of fact, only the least important part of the country was open to the ocean: the most important lay in such a position that an enemy gaining the command of the seas could at once close the main entrances for our commerce. There were practically only three channels of communication with this country: 90 per cent. of the whole imports of the United Kingdom come to England and Wales, and more than 60 per cent. of this trade was concentrated in three ports of London, Liverpool, and Hull (with Goole and Grimsby).¹ These figures showed the extent to which our trade was concentrated along a few lines of communication. Considering the question of insurance, the profits on an annual trade of 700,000,000*l.* of imports and exports ought to be at least 10 per cent., *i.e.*, the annual profits were at least 70,000,000*l.* He thought that no one in private business would hesitate to pay 10 per cent. or 7,000,000*l.* per annum to secure such a profit. The question should be viewed in that light. We ought not to begrudge what was absolutely necessary to maintain our trade. We ought to be in a position strong enough not only to prevent any hostile power or combination of powers from interfering with our trade, but to deter any from making the attempt.

¹ See the next article, p. 136.

MR. JOHN GLOVER said that naval defence, as related to the question of work, wages, and food, directly concerned the great mass of the people. The purpose of the paper was to convince those who had not thought about the matter at all, that this was a question which came home directly to every man who laboured, who depended for living on his weekly wages, and to all who desired for the people an uninterrupted and abundant supply of cheap food. Lord George Hamilton made a clear statement of the facts, so that the public might not cherish the illusion that now, at the end of the nineteenth century, we could live as our fathers had lived fifty years ago. We had in fact lived into a completely new set of economic conditions. Fifty years ago the population of the United Kingdom was 26,000,000, now it was approaching 39,000,000. Fifty years ago we grew 14,000,000 quarters of wheat, and did not consume much more; last year we grew 7,000,000 quarters, and were going to eat 28,000,000. We cannot therefore live, and ought not to legislate as if we were living in the ancient conditions. All our policy must be adjusted to the new and inexorable conditions of our changed circumstances. No other nation is dependent on free maritime communications as we are, and therefore we must adopt a policy of our own, and not be influenced by what happens to suit other countries otherwise circumstanced. We depend for three-fourths of our bread on foreign nations and open sea communications, whereas most other countries could feed themselves. Being absolutely dependent on sea communications, our maritime supremacy must be maintained, in order to secure which the naval question in England should be made the first of all questions. It concerned all Englishmen alike, and belonged to no particular party; and it ought to be above all party questions.

He would like to emphasise what had been said concerning the transfer of our ships to other flags in order to carry on our enormous transport business. Speaking as a shipowner, he considered it a delusion. There were very few countries under whose flag neutrality would be worth anything, and those countries had not the money with which to buy our ships—we should have to give them away. There was another serious objection to this course. During the American civil war the northern States sold their ships to Europe; we had bought a great many of them, and the carrying so lost by the United States had never been recovered. They had lost the bulk of their own sea carrying trade. It was a matter of common knowledge, and could easily be proved statistically, that from being formidable competitors of the United Kingdom, the United States had, since 1863, lost their place as over-sea maritime carriers. That would not suit Englishmen. He hoped the Government would make some arrangement while we were still at peace, so as to guarantee to British shipowners the practical neutrality of its flag, and take on itself the risk of capture under all circumstances. He cherished one more hope. It had been apparent in all recent wars that maritime captures had exceedingly little influence either on the duration of wars or on the fortunes of the combatants; he hoped that the Governments of

Europe would ere long give the European peoples the assurance that even Governments are becoming more rational and more humane, by coming to an agreement amongst themselves to respect private property at sea as much as on land, and so limit and circumscribe the calamities of war when they could not be avoided. It would be accordant with all the better teachings of our civilisation to effect this change in international law, and most honourable to the Governments by whose example the change was initiated.

MR. H. O. ARNOLD-FORSTER, M.P., said that if the full value of this paper were to be known, the lessons it taught ought to go far beyond the room in which they then were. It was sometimes said that the great towns outside London did not take an interest in these matters, but that was not his experience at all. If the Society could tabulate and explain these details in such a form that they could be brought home to the large towns such as Manchester, Bradford, and Belfast, they would be adding very largely to the debt of gratitude the public already owed them for having brought this matter forward. The one great practical step which seemed to arise from the discussion was, he thought, the plan for marine insurance in the case of war. This was eminently a matter for the Society to take up, for there were at present no statistics on which even the outline of a complete system of marine insurance could be based. Mr. Glover had truly said that captures at sea had not been a determining factor in any war of the past, but the whole essence of the paper had been to show that they might be so in the future. We required to abolish the fear of capture, and that could only be done through marine insurance.

These matters had often been considered merely as hypotheses, but there was no doubt that there was a large school of thought abroad which did make the carrying out of such a policy a part of the established literature and ideas in various countries. Only the other day he had been reading the words, not of a pirate, but of an admiral and Minister of the French Republic, who had stated distinctly that he looked forward to seeing torpedo boats destroying the British mail steamers on the high seas under cover of night. The admiral had not considered that the crew of the torpedo boat were liable to be hanged for piracy, but that was the sort of literature with which he (Mr. Arnold-Forster) was familiar. The facts stated in the paper were not only possible, but probable.

There was a temptation in the case of foreigners beyond anything which could affect shipowners in this country. He had been told by a prominent shipowner that if he were to transfer his ships, under colour of a bill of sale, to the French Government, he would receive 200,000*l.* per annum, out of French taxes, for merely condescending to exist, without any subsidy for mails, &c. If we were at war to-morrow, and took in one day every ship our greatest competitor, France, possessed, and every colony they had on the day after, the French nation would absolutely be richer on the third day. There was a dead loss on the French colonial

budget, and the same applied to the shipping subsidies. Therefore the risk was all on one side, and the temptation on the other. He wished these facts to go out broadcast into the country, and he knew that their own inherent value and strength was conclusive and all-sufficient to enforce them in that meeting. But it must be remembered that these were not mere abstractions; they were the possibilities and probabilities of everyday life.

Mr. STEPHEN BOURNE wished to lay stress upon the insufficiency of a comparison of the increase of our trade when taken in terms of value instead of volume. The extreme depression last year had materially altered the condition of the figures subsequent to those which he (Mr. Bourne) had laid before the Society last spring, and he had now before him the figures for the last sixteen years. In that time the whole external trade of the country had only increased in money value by 38,000,000*l.*, but that might be resolved into the difference between an increase in quantity equivalent to 260,000,000*l.*, and a decrease in price of 222,000,000*l.* This manifestly showed the moderation of Lord George Hamilton's figures, and enhanced the importance of protecting this enormous trade. He would make one other remark to guard against the very prevalent custom of attaching more value to imports than to exports. He held that the exporting capacity of the country dominated its power of paying for its imports, and it was also the means by which we invested so much money in foreign countries and in our colonies. He was therefore inclined to attach more primary importance to our export than to our import trade. In the case of war with one country, it would be the interest of some countries to continue sending us the goods which we bought from them; but it was quite the contrary with respect to our exports, for all the countries of the world would unite to check the amount of goods we exported, in order to encourage their own manufactures, to which we were such extensive rivals.

Mr. W. J. HARRIS remembered that in 1868 Cobden had called attention in Parliament to the danger of an enemy's blockading our ports and starving us into submission. We had only a few ports into which the large vessels of which our mercantile marine was composed could enter, and if our fleet were beaten, there could be no doubt that all the estuaries leading to those ports would be blockaded. Ireland would be taken no account of by a hostile fleet so far as blockading was concerned. All their attention would be devoted to the ports of Great Britain. Count Caprivi, in a speech about eighteen months ago, had expressed the opinion that in the next outbreak of a war wheat would be declared contraband, and he (Mr. Harris) considered that we were running the greatest possible risk by growing the small acreage of wheat that we were growing. He fully agreed with the noble Lord in his advocacy of our having a strong fleet, but there was no doubt whatever that in case of an unsuccessful war, both exports and imports would be entirely cut off, and unless we took measures to grow far more

wheat at home than we now did, and altered our fiscal system accordingly, we were running the greatest possible risk.

The PRESIDENT, intervening, said he thought the speaker was departing from the matter contained in the paper.

Mr. HARRIS said that he of course bowed to the President's ruling, but this very important matter had been alluded to in the paper, and he was glad to have had the opportunity of speaking.

Mr. A. E. BATEMAN said that reference had very properly been made to the only experience the present generation had had of a failure in the supply of a staple raw material. He could give some information as to what had occurred during the cotton famine of 1861-64. At that time our imports of raw cotton fell in a single year from 10,000,000 cwt. to less than 5,000,000 cwt.; the effect was that the number of out-door paupers in England and Wales rose from an average of three-quarters of a million to 1,000,000, and 5 per cent. of the population were paupers. At the present moment, with the existing distress, we had only 600,000 out-door paupers, *i.e.*, about 2 per cent. The situation was of course far worse in the cotton districts taken separately; pauperism rose there by more than 140 per cent., and more than 4,000,000*l.* were spent in simply providing the working classes with 2*s.* a week, with such clothing as was possible, and with a certain amount of lodging. All this distress arose from a failure in the raw material of only one industry, and was to a certain extent counterbalanced, because what the cotton industry lost was in part gained by the woollen and linen industries, which were exceedingly prosperous; but under the circumstances which Lord George Hamilton had so ably brought forward, all industries would alike suffer to a most deplorable extent. At the time of the cotton famine, as shown by Government Reports, bread in Lancashire was plentiful and cheap, yet there was every evidence of famine except pestilence and fever. It was now eighty years since we had had really dear food. The few figures he had given would serve to indicate what a fearful situation would arise if, at the same time, the quartern loaf went up to 1*s.* 10*d.* (as in the Napoleonic wars), and the occupations of the people were taken away by the want of raw materials and of the power of exportation.

LORD GEORGE HAMILTON, in reply, said that Mr. Glover had analysed succinctly his main object, which was to try and bring home to the minds of the general public that the conditions under which we were now living had changed, were changing, and must continue to change; and that until this was clearly understood, the public would not fully realise how inefficient in certain directions were the precautions adopted to prevent the occurrence of the calamities he had alluded to. He was glad to find that Mr. Bourne considered the facts laid before them as rather underestimated than over-estimated. There were two phrases to which people generally clung, one was the "transfer of flag," and the

other the "command of the sea." People seemed to think that we could so retain command of the sea during a war, that vessels under the English flag would have the same immunity as in time of peace. But in no war which had lasted any considerable time, had we ever possessed such command of the sea as to be able to obtain immunity for all our vessels. In these days, it was quite clear to all concerned in the shipping trade that the increased risk and insurance would to a considerable extent dislocate our trade, and prevent those who now carried on their business with a certain profit, from being able to do so in a time of war.

His second object in reading this paper had been to induce others to follow up the subject. The question of marine insurance, as suggested by Mr. Arnold-Foster, would form a very legitimate subject for discussion. Mr. Glover had stated the value of our whole trade to be 700,000,000*l.*, but that sum, vast as it was, did not represent anything like the full value of that trade to the country, for, from the moment it entered the country, it was turned over and over again in various occupations. If any statistician would take up one of the big trades—say the steel industry—follow it through all its ramifications, note what became of all the ore imported, ascertain how far other trades were dependent on it, and what would be the effect upon other trades if they were deprived of the steel made from that ore, he would be amazed to find the enormous number of occupations dependent upon or connected with that industry, and how the stoppage of any considerable part of our import of ore would upset the trade of the country.

Sir Rawson Rawson had alluded to the fact that our position was not that of an island in mid ocean. One side of these islands was in close neighbourhood to Europe, where were the great navies which might molest our steamers. If we were involved in any great war, we should undoubtedly not be able to use the ports nearest the continent with the same freedom as now. He had spoken of vessels of over and under twelve knots speed; this figure did not represent any imaginary division between those ships which would be likely to be molested and those likely to escape. He had merely taken this figure because there were no estimates of the number and tonnage of vessels below that rate; and the small number above that rate showed what a large proportion there must be which could only develop a low speed. If it could be worked out, a very considerable proportion would, he believed, be found to be under eight knots, and all these would undoubtedly be laid up. In conclusion, he hoped that the results of this discussion would be not only to impress upon the public outside the permanent importance of the question, but to bring home to them the fact that it was a subject which bore, above all classes, upon the poorest class in the kingdom.

A cordial vote of thanks was then unanimously passed to Lord George Hamilton for his paper.

OCEAN HIGHWAYS: APPROACHES *to the* UNITED KINGDOM.

By SIR RAWSON W. RAWSON, K.C.M.G., C.B.

THE same annual blue book¹ which furnished materials for the "Analysis of the Maritime Trade of the United Kingdom in '1889-91," published in 1892, contains returns of the sea-borne trade of each port of the United Kingdom, shown in three separate tables: (a), of imports; (b), of exports of British and Irish produce and manufactures; and (c), of exports of foreign and colonial produce. The ports are arranged alphabetically, and the trade of any one port can only be ascertained by bringing together the figures from the three tables. This has been done in the following series, and the ports have been arranged according to their geographical position, in convenient sections, thus showing the sea borne trade of each port of the kingdom, and the aggregate of each section and division.

The sections are eight in number, and they have been arranged according to the direction by which the sea-borne traffic would usually approach them. These lines may be called the "approaches to the United Kingdom." They are but four in number, and severally include the following coasts:—

1. From Sligo, by the west and south of Ireland, to the Bristol and British Channels, as far as London.

2. From Londonderry, by the north and east of Ireland, and from Stornoway (Hebrides Islands), by the west of Scotland and of England, as far as Milford, at the entrance of the Bristol Channel.

3. From the entrance of St. George's Channel over the area of the preceding section.

4. From London, by the east of England and Scotland, to Lerwick (Shetland Islands).

With regard to these four approaches, it must be remarked—

1st. The traffic by the second and third cannot be shown separately.

2nd. Five out of the eight sections and part of a sixth are open to the ocean or North Sea—

1.	Section No. 1.....	West and south of Ireland.
2.	„ 2.....	South-west of England.
3.	„ 4.....	North of Ireland.
4.	„ 5.....	West of Scotland.
5.	„ 7.....	East of England.
6.	„ 8.....	„ Scotland.

¹ "Annual Statement of the Trade of the United Kingdom with Foreign Countries and British Possessions."

Over this extensive coast line an effectual blockade could scarcely be established by any hostile nation, and, with the exception of the ports on the estuaries of the Clyde, Forth, and Humber, the port of Harwich, and the ports on the Bristol Channel, the trade of these sections is comparatively small, as will be presently shown.

3rd. The main trade of the United Kingdom is concentrated within the third and sixth sections, and these must be dominated by the power holding command of the entrances of the British Channel and Straits of Dover in one direction, and of the North and St. George's Channels in the other.

It is not supposed that the trade of any port or section of ports approaches it in a single direction, but there are no means of distinguishing the line of approach; and it is therefore assumed, for the purpose of this paper, that the variations balance one another. Scandinavia may send timber through the Straits of Dover southward to Liverpool, but Chile sends cubic nitre through the same straits northward to Newcastle.

The present occasion is not convenient for drawing from these tables all the instructive results which they present, but the following are some of the most important. The figures relate to the year 1892 :—

1. The total—

	£
Imports into the United Kingdom amounted to	423,632,000
Exports from „ „	289,796,000
	<hr/>
Total	713,428,000

2. The percentage proportion carried on by each division of the United Kingdom in the five years 1888-92 averaged—

	Imports.	Exports.
England	89·6	92·3
Scotland	8·3	7·3
Ireland	2·1	0·4
Total.....	100·0	100·0

The proportions for each of the five years are given in Table 2, in order to show the stability of relations of the volume of trade in the three divisions.

3. The ports in Sections 3 and 6, "within the narrow seas," furnish 70 (69.6) per cent., and the rest of the kingdom open to the ocean furnishes 30 (30.4) per cent. of the whole trade.

4. The two ports of London and Liverpool furnish 61.6 per

cent. of the whole trade; twelve other ports furnish 29·2 per cent., and the remaining ports, ninety-eight in number, furnish 9·2, or less than 10 per cent. The following is the order in which the fourteen principal ports stand:—

	Value of Imports and Exports.	Percentage Proportion of Whole Trade.	
	Mln. £'s	Per cent.	
London	227	31·8	} 61·6
Liverpool	213	29·8	
Hull	45	6·2	
Glasgow	27	3·9	
Harwich	22	3·1	} 29·2
Southampton	16	2·2	
Grimsby	15	2·2	
Leith	14	2·0	
Folkestone	14	2·0	
Newhaven	12	1·8	
Bristol	11	1·6	
Newcastle	10	1·4	
Cardiff	10	1·4	
Goole	10	1·4	
Other ports (98)...	67	9·2	9·2
Total	713	100·0	

5. Of the 112 ports, 68 are situated in England, 28 in Scotland, and 16 in Ireland.

6. Of the 30·4 per cent. furnished by ports open to the ocean, 24·4 per cent. is furnished by ports or clusters of ports already mentioned, viz.:—

	Value of Trade.	Percentage Proportion of Total Trade.
	Mln. £'s	Per cent.
1. On the Clyde (Firth and river)	30,	4·2
2. „ Firth of Forth	20,	2·8
3. „ Humber estuary	70,	9·8
4. Harwich	22,	3·1
5. On the Bristol channel	32,	4·5
Other Ports	175,	24·4
	39,	8·0
Total	214,	30·4

7. With regard to the small export trade from Ireland, it must be noted that its surplus agricultural produce finds a market in Great Britain, and that its shipments of home made manufactures to foreign countries and British possessions, which are not considerable, are made through British ports.

8. The proportion of imports to total exports in England, on the average of the five years 1888-92, was as 56·8 to 43·2, and the proportion of imports to exports of British and Irish produce and manufactures only was as 63 to 37. In Scotland the former proportion was as 60·5 to 39·5, and the latter, varying slightly, was as 61·4 to 38·6. The proportion of imports to exports is greater in Scotland than in England.

9. A similar comparison of the trade of London and Liverpool shows results which may be advantageously exhibited more in detail. On the average of 1888-92—

	Mln. £'s	Mln. £'s
London annually imported	144,4	
" exported of British merchandise	49,2	} 86,7
" " foreign and colonial mer- chandise	37,5	
Liverpool annually imported.....	108,3	
" exported of British merchandise.....	98,2	} 111,3
" " foreign and colonial merchandise	13,2	

In London the proportion of imports to total exports was as 62·4 to 37·6, and to British exports only as 74·2 to 25·8. In Liverpool the proportion of imports to total exports was as 49·2 to 50·8, and to British exports as 52·5 to 47·5. Imports preponderated in London, as the great *entrepôt* for wool and other Colonial produce; exports in Liverpool, as the port of shipment for the manufactures of the northern and central counties of England, and notwithstanding its immense import trade in raw cotton and grain. The difference has a significance in the matter of the defence of the ocean approaches.

10. The trade of the following ports is worthy of special notice :—

	Mln. £'s.
On the Humber, Hull, Goole and Grimsby	69
Harwich.....	22
On the British Channel, Southampton, Newhaven, Folke- stone, and Dover	} 51

The trade of Scotland is 59 million £, and that of Ireland 10 million £.

11. Tables 4 and 5 show the import and export trades of the United Kingdom with each foreign country and British possession, grouped according to the line of approach and departure, which will serve to show the relative importance of each line. The figures and calculations relate to the year 1892. It will be sufficient on the present occasion to show the percentage proportion of each group, as regards imports and exports, separately and united :—

	Percentage Proportion of		Total.	Imports.	Exports.	Total.
	Imports.	Exports.				
	Per cent	Per cent	Per cent			
1. By North Sea.....	13.1	16.0	14.2	} 34.5	33.5	34.1
2. From British Channel and Bay of Biscay	21.4	17.5	19.9			
3. From the Mediterranean shores and Portugal	11.1	10.7	10.9	} 31.9	38.6	34.6
4. From Africa, exclusive of Me- diterranean and Red Sea	2.0	4.3	2.9			
5. From Asia, Australasia, and Red Sea	18.8	23.6	20.8	} 33.6	27.9	31.3
6. From North America on the Atlantic	28.0	16.9	23.5			
7. From North America on the Pacific	1.0	0.3	0.7			
8. From Central America (in- cluding West Indies)	1.3	3.8	2.3			
9. From South America	3.3	6.9	4.8			
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

This abstract shows in a striking manner that the trade of the country is nearly equally divided over three lines of approach; that as regards the trade with the Baltic, Scandinavia, and the western coast of Europe, the proportions of imports and exports are nearly balanced; that in the trade with the rest of Europe, under the 3rd head, the proportions are also nearly balanced; that in the trade with Asia, Africa, Australia, and Central and South America, the proportion of exports exceeds that of imports by 52 per cent., but with North America the proportion of imports exceeds that of exports by 68.6 per cent. Of the total imports from the United States in 1891, 35 per cent. consisted of raw cotton, and nearly 43 per cent. consisted of articles of food, viz., grain, cattle, meat, bacon, hams, lard, cheese, and tobacco. Other items would probably bring articles of food up to 50 per cent., or one half of the whole amount. It is not to be expected, from the permanent difference in the natural circumstances of the two countries, that this glaring inequality in the commercial interchange between them should ever be levelled; but it is very desirable, and may fairly be claimed by England, that it should not be aggravated, to her injury, by a prohibitive and avowedly hostile tariff.

TABLE 1.—*Abstract of Table 3. Value of Imports and Exports at the Ports of the United Kingdom on each Line of Approach, in the Year 1892.*

[000's omitted.]

Lines of Approach.	Routes.	Imports.	Exports. (Total.)	Total.
		£	£	£
First	From Sligo to London	202,942,	113,241,	316,183,
Second ...	„ Londonderry and Storn- away (Hebrides) to Milford	135,615,	119,042,	254,657,
Third.....	The same, <i>via</i> St. George's Channel			
Fourth ...	From London to Lerwick (Shetland Isles)	85,075,	57,513,	142,588,
	Total	423,632,	289,796,	713,428,

TABLE 2.—*Percentage Proportion of the Value of Imports and Exports at the Ports of each Division of the United Kingdom, in each of the Five Years 1888-92, with the Averages of that period.*

Years.	Imports.				Exports (Total).			
	England.	Scotland.	Ireland.	Total.	England.	Scotland.	Ireland.	Total.
1888.....	90·0	8·0	2·0	100·0	92·7	7·0	0·3	100·0
'89.....	89·5	8·6	1·9	100·0	92·4	7·2	0·4	100·0
'90.....	89·5	8·4	2·1	100·0	92·1	7·6	0·4	100·0
'91.....	90·0	7·8	2·2	100·0	92·3	7·3	0·4	100·0
'92.....	89·1	8·5	2·4	100·0	92·2	7·4	0·4	100·0
Average	89·6	8·3	2·1	100·0	92·3	7·3	0·4	100·0

TABLE 3.—*Value of the Trade (Imports and Total Exports) in the Year 1892 of the several Ports of the United Kingdom, on each of the Lines of Approach (Ocean Highways) to the Shores of the Kingdom.*

FIRST LINE.

[000's omitted].

Sections.	Ports.	Imports.		Exports (Total).		Imports and Exports.	
		Principal Ports (above 1 Min. £).	Others.	Principal Ports (above 1 Min. £).	Others.	Principal Ports (above 1 Min. £).	Others.
<i>1st Section.</i>		£	£	£	£	£	£
IRELAND.	Sligo	—	281,	—	—	—	281,
West and South	Westport	—	136,	—	—	—	136,
	Galway	—	153,	—	—	—	153,
	Limerick	—	653,	—	—	—	653,
	Tralee	—	53,	—	—	—	53,
	Skibbereen	—	4,	—	—	—	4,
	Cork	1,149,	—	—	7,	1,156,	—
	Waterford	—	384,	—	5,	—	389,
	Total	1,149,	1,664,	—	12,	1,156,	1,669,
<i>2nd Section.</i>							
ENGLAND.	Milford	—	18,	—	4,	—	22,
South-West ;	Llanelly	—	50,	—	98,	—	148,
from	Swansea	2,323,	—	4,485,	—	6,808,	—
Milford	Cardiff	2,754,	—	7,169,	—	9,923,	—
	Newport	—	602,	—	610,	1,212,	—
	Gloucester	2,138,	—	—	96,	2,234,	—
	Bristol	9,743,	—	1,753,	—	11,496,	—
	Bridgwater	—	117,	—	4,	—	121,
	Barnstaple	—	7,	—	—	—	7,
	Padstow	—	1,	—	—	—	1,
	Total	16,958,	795,	13,407,	812,	31,673,	299,
<i>3rd Section.</i>							
ENGLAND.	Penzance	—	60,	—	37,	—	97,
South ;	Falmouth	—	144,	—	14,	—	158,
British Channel	Fowey	—	18,	—	156,	—	174,
to	Plymouth	1,318,	—	—	166,	1,484,	—
London, inclusive	Dartmouth	—	6,	—	4,	—	10,
	Teignmouth	—	33,	—	12,	—	45,
	Exeter	—	141,	—	3,	—	144,
	Truro	—	33,	—	—	—	33,
	Weymouth	—	301,	—	269,	—	560,
	Poole	—	114,	—	9,	—	123,
	Cowes	—	9,	—	2,	—	11,
	Southampton	8,205,	—	7,733,	—	15,938,	—
	Portsmouth	—	166,	—	13,	—	179,
	Littlehampton	—	38,	—	4,	—	42,
	Shoreham	—	137,	—	14,	—	151,
	Newhaven	9,540,	—	2,915,	—	12,455,	—
	Folkestone	11,784,	—	2,228,	—	14,012,	—
	Dover	5,912,	—	2,901,	—	8,813,	—
	Ramsgate	—	17,	—	1,	—	18,
	Faversham	—	21,	—	16,	—	37,
	Rochester	—	100,	—	46,	—	146,
	London	144,279,	—	82,477,	—	226,756,	—
	Total	181,038,	1,338,	98,254,	756,	279,458,	1,928,
	Total, 2nd section	16,958,	795,	13,407,	812,	31,673,	299,
	„ 1st „	1,149,	1,664,	—	12,	1,156,	1,669,
	Total of first line	199,145,	3,797,	111,661,	1,580,	312,287,	3,896,

TABLE 3.—Value of the Trade (Imports and Total Exports) in the Year 1892—Contd.

SECOND LINE.

[000's omitted.]

Sections.	Ports.	Imports.		Exports (Total).		Imports and Exports.		
		Principal Ports (above 1 Min. £)	Others.	Principal Ports (above 1 Min. £).	Others.	Principal Ports (above 1 Min. £)	Others.	
<i>4th Section.</i>								
IRELAND. North and East.	Londonderry.....	£ —	£ 476,	£ —	£ —	£ —	£ 476,	
	Coleraine	—	7,	—	—	—	7,	
	Belfast	3,717,	—	—	107,	3,824,	—	
	Newry	—	61,	—	5,	—	66,	
	Dundalk	—	17,	—	—	—	17,	
	Drogheda	—	10,	—	—	—	10,	
	Dublin	3,005,	—	—	152,	3,157,	—	
	Wexford	—	2,	—	—	—	2,	
	Total	6,722,	573,	—	264,	6,981,	578,	
<i>5th Section.</i>								
SCOTLAND, West.	Stornoway.....	—	10,	—	76,	—	86,	
	Campbelltown	—	88,	—	—	—	88,	
	Glasgow	13,423,	—	13,640,	—	27,063,	—	
	Greenock	2,691,	—	—	287,	2,978,	—	
	Ardrossan	—	161,	—	61,	—	222,	
	Irvine.....	—	9,	—	—	—	9,	
	Troon	—	116,	—	48,	—	164,	
	Ayr	—	137,	—	26,	—	163,	
	Dumfries	—	9,	—	—	—	9,	
	Stranraer	—	6,	—	—	—	6,	
	Total	16,114,	536,	13,640,	498,	30,041,	747,	
<i>6th Section.</i>								
ENGLAND. West; to Milford Haven.	Carlisle	—	125,	—	—	—	125,	
	Workington	—	29,	—	—	—	29,	
	Whitehaven	—	38,	—	51,	—	89,	
	Isle of Man	—	25,	—	—	—	25,	
	Barrow	—	517,	—	288,	—	805,	
	Lancaster	—	55,	—	—	—	55,	
	Preston	—	43,	—	—	—	43,	
	Liverpool	109,347,	—	103,314,	—	212,661,	—	
	Fleetwood	1,148,	—	—	183,	1,331,	—	
	Maryport	—	84,	—	540,	—	624,	
	Runcorn	—	124,	—	8,	—	132,	
	Chester	—	50,	—	9,	—	59,	
	Beaumaris	—	53,	—	23,	—	76,	
	Carnarvon	—	22,	—	224,	—	246,	
	Aberystwith	—	9,	—	—	—	9,	
	Cardigan	—	1,	—	—	—	1,	
		Total	110,495,	1,175,	103,314,	1,326,	213,992,	2,318,
		Total 2nd section....	16,114,	536,	13,640,	498,	30,041,	747,
	„ 1st „	6,722,	573,	—	264,	6,981,	578,	
	Total of second line	133,331,	2,284,	116,954,	2,088,	251,014,	3,643,	

TABLE 3.—*Value of the Trade (Imports and Total Exports) in the Year 1892—Contd.*

THIRD LINE.

[000's omitted.]

Sections.	Ports.	Imports.		Exports (Total).		Imports and Exports.	
		Principal Ports (above 1 Mln. £).	Others.	Principal Ports (above 1 Mln. £).	Others.	Principal Ports (above 1 Mln. £).	Others.
<i>7th Section.</i>		£	£	£	£	£	£
ENGLAND.	Colchester	—	26,	—	15,	—	41,
East;	Harwich	16,299,	—	5,700,	—	21,999,	—
from London	Ipswich	—	294,	—	43,	—	337,
to	Lowestoft	—	90,	—	7,	—	97,
Scotland	Yarmouth	—	203,	—	25,	—	228,
	Lynn	1,183,	—	—	70,	1,253,	—
	Wisbeach	—	144,	—	8,	—	152,
	Boston	—	752,	—	337,	1,089,	—
	Grimsby	6,572,	—	8,927,	—	15,499,	—
	Goole	4,476,	—	5,368,	—	9,844,	—
	Hull	24,705,	—	19,850,	—	44,555,	—
	Scarborough	—	6,	—	—	—	6,
	Whitby	—	4,	—	—	—	4,
	Middlesborough	—	911,	1,940,	—	2,851,	—
	Stockton	—	202,	—	55,	—	257,
	Hartlepool	1,803,	—	—	609,	2,412,	—
	Sunderland	—	664,	—	689,	1,353,	—
	Shields, N. and S....	—	921,	1,883,	—	2,804,	—
	Newcastle	6,437,	—	3,905,	—	10,342,	—
	Berwick	—	90,	—	21,	—	111,
	Total	61,475,	4,307,	47,573,	1,879,	114,001,	1,233,
<i>8th Section.</i>							
SCOTLAND.	Leith	10,674,	—	3,634,	—	14,308,	—
East	Granton	—	543,	—	152,	—	695,
	Borrowstowness	—	238,	—	253,	—	491,
	Grangemouth	2,093,	—	1,259,	—	3,352,	—
	Methli	—	16,	—	—	—	16,
	Alloa	—	232,	—	138,	—	370,
	Kirkcaldy	—	200,	—	706,	—	906,
	Perth	—	19,	—	1,	—	20,
	Dundee	3,855,	—	1,083,	—	4,938,	—
	Arbroath	—	138,	—	11,	—	149,
	Montrose	—	181,	—	48,	—	229,
	Aberdeen	—	938,	—	129,	1,067,	—
	Peterhead	—	40,	—	449,	—	489,
	Banff	—	15,	—	61,	—	76,
	Inverness	—	68,	—	28,	—	96,
	Wick	—	24,	—	53,	—	77,
	Kirkwall	—	14,	—	17,	—	31,
	Lerwick	—	5,	—	39,	—	44,
	Total	16,622,	2,671,	5,976,	2,085,	23,665,	3,689,
	Total, 1st section	61,475,	4,307,	47,573,	1,879,	114,001,	1,233,
	Total of third line	78,097,	6,978,	53,549,	3,964,	137,666,	4,922,

TABLE 4. — Abstract of Table 5. Value of the Trade (Imports and Exports) of the United Kingdom with each Country (including the Parcel Post), arranged approximately according to its Ordinary Line of Approach, in the Year 1892.

[000's omitted.]

Countries Arranged According to Line of Approach.		Imports.			Exports (Total).			Imports and Exports.		
		From Foreign Countries.	From British Posses- sions.	Total.	To Foreign Countries.	To British Posses- sions.	Total.	With Foreign Countries.	With British Posses- sions.	Total.
1. By North Sea	direct	£ 55,311,	£ —	£ 55,311,	£ 46,631,	£ —	£ 46,631,	£ 101,942,	£ —	£ 101,942,
2. From British Channel and Bay of Biscay....	"	89,353,	1,169,	90,522,	49,781,	978,	50,759,	139,134,	2,147,	141,281,
3. From the Mediter- ranean shores and Portugal	"	46,996,	142,	47,138,	29,783,	1,562,	31,345,	76,779,	1,704,	78,483,
4. From Africa, exclusive of Mediterranean and Red Sea	chiefly direct	949,	7,715,	8,664,	2,097,	10,632,	12,729,	3,046,	18,347,	21,393,
	<i>vid</i>									248,387,
5. From Asia, Austral- asia, and Red Sea ...	Mediterranean and the Cape	8,872,	70,931,	79,803,	12,747,	55,961,	68,708,	21,619,	126,892,	148,511,
6. From North America on the Atlantic	direct	103,933,	14,567,	118,500,	40,531,	8,628,	49,159,	144,464,	23,195,	167,659,
7. From North America on the Pacific.....	<i>vid</i> Cape Horn	4,264,	—	4,264,	883,	—	883,	5,147,	—	5,147,
8. From Central America....	direct	2,560,	3,132,	5,692,	7,741,	3,403,	11,144,	10,301,	6,535,	16,836,
9. " South America ...	"	13,785,	109,	13,894,	20,236,	45,	20,281,	34,021,	154,	34,175,
Total		326,023,	97,765,	423,788,	210,430,	81,209,	291,639,	536,453,	178,974,	715,427,

TABLE 5.—*Value of the Trade (Import and Export) of the United Kingdom with each Country, arranged approximately according to its Ordinary Line of Approach, in the Year 1892.*

[000's omitted.]

Countries arranged according to Line of Approach.	Imports.			Exports.		
	From Foreign Countries.	From British Posses- sions.	Total.	To Foreign Countries.	To British Posses- sions.	Total.
	£	£	£	£	£	£
1. North Sea—						
Russia, northern ports	9,737,	—		7,671,	—	
Sweden	8,230,	—		3,955,	—	
Norway	3,576,	—		2,325,	—	
Germany	25,727,	—		29,642,	—	
Denmark	8,041,	—		3,038,	—	
Total	55,311,	—	55,311,	46,631,	—	46,631,
2. British Channel and Bay of Biscay—						
Holland	28,821,	—		15,631,	—	
Belgium	17,013,	—		12,813,	—	
France	43,519,	—		21,337,	—	
Channel Islands	—	1,169,		—	978,	
Total	89,353,	1,169,	90,522,	49,781,	978,	50,759,
3. Mediterranean Shores—						
Portugal	3,441,	—		1,773,	—	
Spain	10,917,	—		5,212,	—	
Italy	3,284,	—		6,308,	—	
Austrian territories	1,238,	—		1,525,	—	
Greece	1,827,	—		991,	—	
Bulgaria	51,	—		185,	—	
Servia	—	—		5,	—	
Roumania	2,974,	—		1,389,	—	
Turkey	5,552,	—		6,681,	—	
Russia, southern ports	5,385,	—		1,206,	—	
Egypt	10,525,	—		3,316,	—	
Tripoli	240,	—		5,	—	
Tunis	132,	—		113,	—	
Algeria	674,	—		337,	—	
Morocco	755,	—		707,	—	
Spanish ports in Morocco	—	—		30,	—	
Gibraltar	—	38,		—	676,	
Malta	—	104,		—	886,	
Total	46,996,	142,	47,138,	29,783,	1,562,	31,345,

TABLE 5.—*Value of the Trade of the United Kingdom with each Country in 1892—Contd.*

[000's omitted.]

Countries arranged according to Line of Approach.	Imports.			Exports.		
	From Foreign Countries.	From British Posses- sions.	Total.	To Foreign Countries.	To British Posses- sions.	Total.
4. Africa—	£	£	£	£	£	£
French Possessions, West Africa	44,	—		478,	—	
Azores	70,	—		63,	—	
Madeira	65,	—		98,	—	
Canary Islands	256,	—		455,	—	
Portuguese Possessions, West Africa	27,	—		335,	—	
Fernando Po	3,	—		11,	—	
Congo Free State	4,	—		72,	—	
Native States, West Africa	339,	—		268,	—	
Madagascar	121,	—		89,	—	
Bourbon (Réunion)	—	—		9,	—	
Portuguese Possessions, East Africa	20,	—		216,	—	
French Possessions, East Africa	—	—		2,	—	
German	—	—		1,	—	
British " West Africa	—	1,788,		—	1,623,	
South Africa and Natal	—	5,463,		—	8,595,	
British Possessions, East Africa	—	234,		—	123,	
Mauritius	—	230,		—	291,	
Total.....	949,	7,715,	8,664,	2,097,	10,632,	12,729,
5. Asia and Australasia—						
Abyssinia	—	—		12,	—	
Arabia	—	—		1,	—	
Persia	244,	—		318,	—	
Siam	52,	—		113,	—	
Cochin China, Camboja, and Tonquin	196,	—		30,	—	
Borneo	—	—		4,	—	
Native territories in Indian Seas	229,	—		10,	—	
Java	1,535,	—		1,984,	—	
Dutch Possessions, East Indies	18,	—		300,	—	
French " "	4,	—		—	—	
Portuguese " "	—	—		25,	—	
Philippine Islands	2,131,	—		764,	—	
Macao	8,	—		—	—	
China	3,583,	—		5,837,	—	
Japan	804,	—		3,282,	—	
Pacific Islands	68,	—		67,	—	
Aden	—	225,		—	222,	
British India	—	30,513,		—	29,047,	
Straits Settlements	—	4,868,		—	2,206,	
Ceylon	—	3,945,		—	990,	
Hong Kong	—	837,		—	1,973,	
Australasia	—	30,543,		—	21,523,	
Total.....	8,872,	70,931,	79,803,	12,747,	55,961,	68,708,

TABLE 5.—*Value of the Trade of the United Kingdom with each Country in 1892—Contd.*

[000's omitted.]

Countries arranged according to Line of Approach.	Imports.			Exports.		
	From Foreign Countries.	From British Posses- sions.	Total.	To Foreign Countries.	To British Posses- sions.	Total.
6. North America, East—	£	£	£	£	£	£
United States on the Atlantic ...	103,922,	—		40,529,	—	
Whale fisheries, northern.....	11,	—		2,	—	
British North America.....	—	14,566,		—	8,530,	
Bermudas	—	1,		—	98,	
Total.....	103,933,	14,567,	118,500,	40,531,	8,628,	49,159,
7. North America, West—						
United States on the Pacific ...	4,264,	—	4,264,	883,	—	883,
8. Central America—						
West Indies, Danish.....	1,	—		80,	—	
„ Dutch	40,	—		185,	—	
„ French	2,	—		288,	—	
„ Spanish	91,	—		2,735,	—	
Hayti and San Domingo	41,	—		262,	—	
Mexico	454,	—		1,459,	—	
Central America	1,089,	—		865,	—	
Colombia.....	457,	—		1,212,	—	
Venezuela	257,	—		385,	—	
Ecuador	128,	—		270,	—	
West Indies, British	—	1,945,		—	2,433,	
British Guiana	—	948,		—	863,	
„ Honduras	—	239,		—	107,	
Total	2,560,	3,132,	5,692,	7,741,	3,403,	11,144,
9. South America—						
Peru	863,	—		1,574,	—	
Chile	4,029,	—		3,871,	—	
Brazil	8,218,	—		3,512,	—	
Uruguay	1,317,	—		288,	—	
Argentina	5,808,	—		4,540,	—	
Paraguay.....	1,	—		—	—	
Falkland Islands	—	45,		—	109,	
Total.....	20,236,	45,	20,281,	13,785,	109,	13,894,

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I.—*Commercial History and Review of 1893.*

THE following is taken from the supplement to the *Economist* of 17th February, 1894, in continuation of similar extracts for previous years:—

“Perhaps the most noteworthy feature of our trade in 1893 is the strength with which it resisted the series of extremely adverse influences to which, from the beginning to the end of the year, it was exposed. The wages dispute in the cotton trade, which the employers designated a strike and the workmen a lock-out, continued throughout the whole of the March quarter, to the great detriment of that important branch of our industry. Scarcely had this impediment to business been removed, than fresh difficulties were created by the banking crisis in Australia, which not only involved a large lock up of British capital, but also compelled the colonies to restrict their purchases of British products. It was at first feared that this breakdown of credit in Australia might lead to serious mercantile failures here, and for a time a timorous and sensitive feeling prevailed. Happily, these fears were not realised, and for a short period towards the end of the June quarter, confidence having been somewhat restored, trade showed indications of renewed elasticity. Before it had made any sensible progress, however, this incipient revival was arrested, and made to give place to renewed depression by the outbreak of the currency crisis in the United States. That paralysed for months the business of one of our most important customers, and even when it did subside, uncertainty, first as to the repeal of the Sherman Act, and later on as to tariff legislation, effectually barred the way to improvement. And while suffering from this prolonged prostration of business in the States, our trade sustained a still heavier blow from the great coal strike in the Midlands, which for four months completely disorganised many of our chief branches of industry, compelling them to restrict production, and thus throwing out of employment large numbers of workmen in addition to those

taking part in the strike. All this time, too, other minor causes of depression were at work. The closing of the Indian mints, although it gave a stimulus to our exports to India itself, introduced a new element of uncertainty into our trade with other silver-using countries, all the more unsettling because of the vacillating and short sighted way in which the Indian authorities have been conducting their momentous currency experiment. And in other directions, the financial embarrassments of Italy, Spain, Portugal, and Greece, and the political unsettlement in Brazil and other South American States, have combined to limit the demand for our products.

“With such a series of exceptional difficulties, troubles, and misfortunes to contend against, there would have been no cause for surprise had the volume of our trade in 1893 suffered a considerable diminution. In reality, however, although there certainly was some falling off, the shrinkage, all things considered, was wonderfully slight. As to our foreign commerce, the comparison with the previous year is as follows:—

	1893.	1892.	Increase or Decrease.	
	£	£	£	Per ct.
Imports	405,068,000	423,794,000	—18,726,000	4·42
Exports of British and Irish } produce	218,496,000	227,077,000	— 8,581,000	3·73
Re-exports	58,936,000	64,563,000	— 5,627,000	8·72
Total	682,500,000	715,434,000	—32,934,000	4·60

“But of the decline here shown in the value of our foreign trade, a considerable portion is due not to a curtailment of its volume, but to a fall in prices. Taking the imports retained for home consumption, the value of which amounted last year to 346,132,000*l.*, as compared with 359,231,000*l.* in 1892, it appears that of the total decrease of 13,099,000*l.*, no less than 8,011,000*l.* is attributable to the lower prices at which we were able to satisfy our requirements, while 5,088,000*l.* represents the decline in quantity. And similarly in our exports, out of a total recorded decrease in value of 8,581,000*l.*, we find that 3,804,000*l.* is attributable to lower prices, and 4,777,000*l.* to reduced shipments. Eliminating then the movements in aggregate values due to fluctuations in prices, it is found that our imports of foreign products for home consumption were only 1·42 per cent. less, and our exports of British products only 2·10 per cent. less in 1893 than in 1892. And that there should have been only this slight contraction when all the conditions of business were so extremely adverse, is, as we have said, a gratifying and encouraging feature of the year's trade. How the movement last year compares with that in immediately preceding years will be seen from the following statement:—

Volume of Our Foreign Trade. Increase or Decrease per Cent. as compared with previous Years.

	Imports Retained for Home Consumption.	Exports of Home Produce.	Imports and Exports.
	Per cent.	Per cent.	Per cent.
1893.....	Decrease 1'42	Decrease 2'10	Decrease 1'68
'92.....	Increase 0'33	„ 3'43	„ 1'17
'91.....	„ 4'34	„ 5'30	Increase 0'25
'90.....	Decrease 0'31	„ 0'51	Decrease 0'39
'89.....	Increase 11'25	Increase 3'71	Increase 8'08
'88.....	„ 3'42	„ 4'64	„ 3'94
'87.....	„ 5'07	„ 4'80	„ 4'93

“It must be doubted, however, whether our home trade was as well sustained as our foreign. There are, unfortunately, no statistics which furnish a measure of the volume of our internal trade, such as the Trade and Navigation Returns give of our foreign commerce. Some indication of the general condition of business is, however, afforded by the returns of railway traffic, and taking the statements of the fifteen chief English lines, whose accounts will be found summarised in the appendix, we get the following comparison with 1892:—

	Passengers and Parcels.		Merchandise.		Minerals.	
	1893.	1892.	1893.	1892.	1893.	1892.
	£	£	£	£	£	£
First six months	13,092,900	12,732,100	9,121,300	9,199,000	6,253,100	6,346,100
Second „	15,078,600	15,353,600	9,303,000	9,670,800	5,955,500	7,233,400
Total for year ...	28,171,500	28,085,700	18,424,300	18,869,800	12,208,600	13,579,500
Increase or decrease first six months....	+ 360,800 = 2'8 per cent.		- 77,700 = 0'8 per cent.		- 93,000 = 1'5 pr.ct.	
Increase or decrease second six months }	- 275,000 = 1'8 „		- 367,800 = 3'8 „		- 1,277,900 = 17'7 „	
Total increase or de- crease for year	+ 85,800 = 0'3 per cent.		- 445,500 = 2'4 per cent.		- 1,370,900 = 10'1 pr.ct.	

“The comparison for the first half of the year is not unfavourable. The falling off in railway traffics was then proportionately smaller than that in our foreign trade, the inference being that our home markets were in a relatively healthier condition than the foreign. In the succeeding six months, however, there was a complete change, the railway traffic falling off to a greater extent

than could be accounted for by the movement in our external trade. Both Scotland and Ireland no doubt fared better than England. They had both better harvests, and Scotland profited largely by the English coal strike, which diverted business to the North. The home trade as a whole, however, cannot but have suffered considerably from the prolonged struggle in the Midlands, with its attendant disturbance of other industries, and the impoverishment of large masses of our working population through voluntary or enforced idleness. All available data, moreover, go to show that in 1893 manufacturing and trading profits, which had suffered curtailment in previous years, were, as a rule, still further cut into. Altogether, therefore, it was to the business community a year of stress, struggle, and tribulation—a year which cannot be looked back upon with any kind of satisfaction save this negative one, that after all its results were not so bad as might reasonably have been feared from the many potent causes of depression that were in operation.

“Reference has been made to the condition of agriculture, which in England, at all events, contributed to the curtailment of the home trade. There can be no doubt that, taken all round, 1893 was to the majority of English farmers one of the worst of a series of bad years. Owing to the drought all the cereal crops proved deficient, and instead of this being compensated for by a rise in prices, these fell to about the lowest points on record. Over a large portion of England too the hay crop was a more or less complete failure, and the shortness of food, by causing forced sales of live stock, aggravated still more the farmers’ losses. Fortunately, the latter part of the year proved very favourable for farming operations, and the agricultural outlook is now more hopeful. But whatever may lie before them, English farmers did certainly suffer severely last year. On the other hand, owing to more favourable climatic conditions, to the farmers of Scotland and Ireland 1893 was a fairly satisfactory year, and it is something to be able to record that the agricultural depression, although severe over a large area of the country, was not felt everywhere. During the year a Royal Commission on Agricultural Depression was appointed, more, it would appear, with a view to enabling the Government to pose as the friend of the farmer than with any hope of beneficial results from its labours in a field which previous commissions had practically exhausted. But if there is little to expect from this inquiry, there is a good deal to fear from some developments of the Government scheme for the reform of local government, which would place the administration of rates in rural localities in the hands of those who do not contribute towards them, an arrangement which it is safe to predict would conduce to extravagance, and increase the burden of local taxation, which the farmers already find more than sufficiently onerous.

Gazette Average Price of Wheat (per Imperial Quarter) in United Kingdom immediately after Harvest, 1887-93, and Total Average Gazette Price of Calendar Years.

Periods.	1893.	1892.	1891.	1890.	1889.	1888.	1887.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
After harvest.....	25 11	29 4	40 11	35 9	31 2	36 4	29 11
Calendar year average	26 4	30 4	37 —	31 11	29 9	31 10	32 6

Comparative Gazette Prices of Grain.

Week.	Wheat.			Barley.			Oats.		
	1893.	1892.	1891.	1893.	1892.	1891.	1893.	1892.	1891.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Aug. 5.....	26 2	29 7	38 6	21 8	24 —	25 7	21 9	21 9	21 9
12.....	26 3	29 11	38 9	21 1	22 9	26 6	20 6	21 5	21 5
19.....	26 5	29 7	39 4	22 5	23 8	26 4	19 6	21 6	21 2
26.....	25 11	29 4	40 3	26 9	23 11	26 3	18 6	21 2	21 3
Sept. 2.....	25 5	29 1	40 11	26 9	24 2	27 7	18 7	20 3	21 9
9.....	25 7	29 5	41 8	27 2	27 8	29 3	17 4	20 2	21 8
16.....	26 —	29 1	41 2	27 8	27 11	28 11	17 6	19 4	21 1
23.....	26 9	28 4	36 5	27 10	28 3	28 1	17 9	18 10	19 1
30.....	27 6	27 10	34 5	28 4	27 11	28 —	17 11	18 —	18 10
Oct. 7.....	27 10	27 9	34 4	29 —	27 11	28 10	17 10	17 11	18 5
14.....	27 9	28 1	34 10	29 5	27 6	28 11	18 —	17 8	18 7
21.....	27 6	28 7	34 9	29 6	27 9	29 6	18 1	17 11	18 10
28.....	27 6	28 8	35 2	29 6	27 9	29 11	18 2	17 11	18 8
Nov. 4.....	27 4	28 9	35 11	29 5	27 7	30 7	18 2	17 9	19 5
11.....	27 4	28 3	36 7	29 3	27 4	30 11	18 1	18 —	20 6
18.....	27 4	27 11	37 2	29 2	26 7	30 11	18 2	18 —	21 4
25.....	27 1	27 5	38 9	28 9	26 —	31 3	18 3	17 7	22 4
Dec. 2.....	27 —	27 —	39 1	28 8	25 5	30 11	18 3	17 2	22 4
9.....	26 9	26 10	38 11	29 1	25 1	30 9	18 4	17 4	22 2
16.....	26 9	26 4	37 10	28 10	24 6	30 1	18 3	16 10	21 7
23.....	26 6	25 9	36 10	29 —	24 6	29 6	18 —	16 10	21 4
30.....	26 6	—	—	29 2	—	—	17 11	—	—

“Although the prices of commodities continued to tend downwards in 1893, the fall, as registered by our index number, was comparatively slight, amounting, as will be seen from the following statement, to a little under 2 per cent.:—

‘Index Number,’ representing
the Combined Prices of
Twenty-two Leading Commodities.

1st January, 1894.....	2082
„ July, '93.....	2105
„ January, '93.....	2121
„ July, '92.....	2081
„ January, '92.....	2133
„ July, '91.....	2199
„ January, '91.....	2224
„ July, '90.....	2259
„ January, '90.....	2236
„ July, '89.....	2161
„ January, '89.....	2187
„ „ '88.....	2230
„ „ '87.....	2059

“There is one point in connection with these price fluctuations to which it may be desirable to direct attention, and that is that the course of prices during the past few years has completely disproved the theory so strongly affirmed by bimetallists, that there has been a close connection between the movements in the gold prices of commodities and of silver. If there had really been any such correlation, the very heavy drop which took place last year in the price of the white metal would have had its counterpart in a great decline in general prices. No such movement, however, has taken place, and if we go back a little further, the same divergence is observable. From the table given above, it will be seen that the prices of commodities stood at a slightly higher level at the beginning of this year than they did on the 1st of January, 1887. On the other hand the price of silver, which at the commencement of 1887 was $46\frac{1}{8}d.$ per ounce, had fallen at the beginning of this year to $31\frac{3}{4}d.$ per ounce, a decline of over 30 per cent. Of course the bimetallists would like to persuade people that if silver is suffered to fall in value it will drag the prices of commodities down with it. But the fallacy of this contention is, as we have shown, capable of easy demonstration.

“The evidence of our Index number as to the fall in prices is borne out by the analysis of our foreign trade, which shows that, on the average, the prices of our imports were 2·26 per cent. lower than in 1892, and those of our exports 1·71 per cent. lower. As the result of this decline, we paid for our imports 8,011,000*l.* less than we should have had to do if the prices of 1892 had been maintained, while, on the other hand, we received 3,804,000*l.* less for our exports than they would have realised had we been able to get for them the same prices as in the previous year. And setting the loss against the gain, there is a good balance on the right side. Subjoined is a record of the movement in the prices of imports and exports during the past seven years:—

Prices of Imports and Exports. Average Rise or Fall as compared with previous Years.

	Imports Retained for Home Consumption.	Exports of Home Produce.	Imports and Exports.
	Per cent.	Per cent.	Per cent.
1893.....	— 2·26	— 1·71	— 2·05
'92.....	— 4·17	— 4·91	— 4·46
'91.....	+ 0·50	— 0·93	— 0·08
'90.....	— 1·38	+ 6·41	+ 1·78
'89.....	+ 1·14	+ 2·32	+ 1·61
'88.....	+ 2·89	+ 0·90	+ 2·04
'87.....	— 1·72	— 0·52	— 1·22

“Reverting for a moment to the coal strike, which did so much to blight the trade of last year, it cannot but be regretted that so bitter and disastrous an industrial conflict should in part

have been waged in support of that chimera, the 'living wage.' It may be a question as to whether the employers were justified in calling upon the miners to submit to such a large reduction of wages as they proposed. But, ultimately, the contest resolved itself not into a question of what was a reasonable wage under the circumstances, but into one of a minimum or 'living wage' less than which the miners should in no circumstances be asked to accept. Even the leaders of the men, however, admit that the real difficulty is the superfluity of labour. There is not in the coal industry full employment for all those who are seeking to get a living out of it. The natural remedy for this would be for some of the superfluous labour to be diverted to other occupations. But that is not the remedy which commends itself to those upon whose advice the miners are acting. What they advocate is a reduction of the number of working days. Obviously, however, if the coal miners were to be paid a living wage for three or four days' work, while for that same wage people in other trades had to work six days, the result would be that the mining industry, already over-manned, would be flooded with additional labour anxious to share in its advantages. To further diminish the number of working days so as to make room for the new influx would only increase the attractions of the occupation, and in the end, therefore, the attempt to insure to all engaged in the industry the living wage for which they are advised to stand out would inevitably break down. Thus, in so far as it was directed to the securing of an irreducible minimum wage, irrespective of the conditions of employment, last year's strike, with all the suffering to which it subjected the miners themselves, and inflicted upon others, was an unmitigated evil; and the hope must be that, through the intervention of the Board of Conciliation, we shall have no renewal of such an unwise conflict.

"There is probably no better indication of the condition of our working classes than that afforded by the returns showing our consumption of the dutiable articles upon which a considerable portion of their income is spent. And from these it is evident that, owing to reductions in wages, want of full employment, even for willing workers, and the voluntary idleness, sometimes for protracted periods, of those who took part in the numerous strikes, there was in 1893 a distinct curtailment of the spending power of the people.

Quantities Retained for Home Consumption.

		1893.	1892.	1891.
Tea	lbs.	208,097,400	207,113,700	202,456,800
Coffee	cwts.	242,400	257,600	261,100
Tobacco	lbs.	63,649,800	63,722,200	62,094,600
Wines	galls.	14,164,800	14,624,600	14,855,600
Spirits, home	proof galls.	29,858,000	31,355,300	30,744,300
„ foreign	galls.	7,869,800	8,147,200	8,420,600
Beer.....	barrels	31,594,400	31,508,700	31,667,300

The reduction of income to which the falling off in the consumption for all these commodities, with the exception of tea and beer, testifies was, as we have said, in some measure, voluntary, and too much, therefore, must not be made of the decline. Still, the fact remains that the condition of the working population, as a whole, did deteriorate last year, and of this further evidence is afforded by the returns of pauperism, which are as follows:—

England and Wales.

	End of November.	Total Number of Paupers.	Number in every 1,000 in Receipt of Relief.
1893.....		726,951	24'5
'92.....		672,722	22'9
'91.....		660,823	22'7
'90.....		675,999	23'5
'89.....		702,396	24'7
'88.....		728,483	25'9

There was thus in 1893 a distinct increase not only in the number of paupers, but also in the proportion to population, and that this cannot be attributed altogether to the great coal strike—which, however, had undoubtedly a considerable influence—is proved by the fact that the increase was not confined to the districts mainly affected by that unfortunate dispute, but extended to all divisions of the country without exception. At first sight these figures do not appear to harmonise with the employment statistics published by the Labour Department of the Board of Trade. According to these, the percentage of unemployed members in the trade societies for which returns had been obtained was 8'4 per cent. at the close of last year, as compared with 10'2 per cent. at the end of 1892. These trade societies, however, cover only a relatively small portion of the industrial field, and besides, the numbers of the unemployed were greatly swollen at the end of 1892 by the strike of the cotton operatives. If we carry the comparison back to 1891, the proportion out of employment at the end of last year shows a very material increase, and thus all the statistics combine to stamp 1893 as an exceptionally trying and an unprofitable year.

“Happily, however, the present year has opened more auspiciously, and with better prospects. The condition of trade throughout 1893 was, as has been shown, one of suppressed energy. There was a continued tendency to expansion, which asserted itself whenever anything like an opportunity was afforded, but which was ever being repressed by some new and grave misfortune. And now that we are having at least a respite from fresh troubles, this expansiveness is again manifesting itself in the increase of imports and exports recorded for January, and in the growth of railway traffic. Reporting, moreover, upon the returns received from trade societies, the Labour Department states that these ‘point to an appreciable improvement in the

state of employment during the month' [January], and that 'the general outlook is more hopeful than for some time past.' It would, of course, be idle to expect that nothing will occur to mar or check this improvement. Troubles are always springing up, and this year will certainly yield its crop. We are hardly likely, however, to have again crowded into a term of twelve months such a series of disastrous incidents as we had to struggle against last year, and the way in which trade bore up against these justifies the hope that under less unfavourable conditions it will show renewed growth. No rapid improvement, it appears to us, ought to be looked for. Australia will not soon recover from the shock of last year's banking collapse, and business in and with the United States must continue for some time to be checked by uncertainty as to the form which the projected tariff legislation is likely to assume. Our investors, moreover, are not now, nor are they soon likely to be, in the mood to lend money to impecunious foreign Governments, and thus furnish them with the wherewithal to purchase our products. There is, too, a certain unsettlement in the relations between capital and labour, which is not unlikely to lead to further difficulties. And in these circumstances, a slow and gradual development of trade seems the most we can expect. That, however, according to present indications, we may look for with some confidence.

"The currency experiment which the Indian Government ventured upon in June last, when they closed their mints against silver, has thus far been conducted with astonishing ineptitude. After the decision to stop the coinage of silver was arrived at, the Secretary of State continued for a week or two to sell his drafts at the best price obtainable. Against this, however, the Indian Government immediately protested. They declared that if he accepted a lower price than 1s. 4d., he would utterly defeat the attempt to impart a scarcity value to the rupee, and in deference to their representations a minimum of 1s. 3½d. was fixed. But at that price no bills could be sold, and it became necessary to borrow money here to pay the home charges. By the end of December the borrowing powers of the Government became nearly exhausted, and they then sought and obtained from Parliament authority to raise an additional 10,000,000*l.* if necessary. It was then understood that the minimum price for bills would be adhered to, until at least the end of the current fiscal year, so that the experiment might have a full and fair trial. In January of this year, however, it was suddenly announced that the attempt to fix a minimum was to be abandoned, and that the Council bills would again be sold at current market rates. And similar vacillation was shown in dealing with a proposal to impose an import duty upon silver, which, after being dallied with for some time, was ultimately rejected. All throughout, indeed, it has been evident not only that no well-thought-out plan was being acted upon, but that the Indian and the Home authorities were in conflict with each other as to the proper course to be pursued. Now it has been decided to keep the mints closed, and to take no

other action to enhance the value of the rupee. But how long that decision will be adhered to it is impossible to say. All that we do know definitely is, that thus far the results of the unstable action of the Government have been to disorganise the exchange and the silver market, to curtail very largely India's trade with China, and to permanently increase the home charges by the additions made to the sterling debt. And very soon the question must be raised as to how long an experiment which has worked in this way is to be continued.

"The course of the money market during 1893 was a somewhat chequered one. The first three months were a period of ease and quietude, due in some measure to continuous shipments of gold from the United States. During that time the only movement in the Bank rate was a reduction from 3 to $2\frac{1}{2}$ per cent., made in the last week of January. Early in April, however, warning of coming trouble was given by the failure of the Commercial Bank of Australia, and, although no one augured from that such a complete collapse of Australian banking institutions as afterwards ensued, it did create a certain amount of uneasiness, which gradually deepened as one after another of the Australian banks suspended payment. As a result, the Bank of England raised its rate during the first three weeks in May, first to 3, then to $3\frac{1}{2}$, and again to 4 per cent. Even this quick advance, moreover, failed to keep pace with the anxieties of the market, for the outside discount rates rose more sharply still, and for a fortnight or so were about $\frac{1}{4}$ per cent. higher than the Bank rate. This spasm of stringency was largely due to uncertainty as to the future course of events. It was feared that the collapse in Australia would be followed by serious business difficulties, and bankers, therefore, sought to strengthen themselves so as to be prepared for anything that might occur. To this end they called in loans, and so greatly curtailed the facilities ordinarily given to borrowers that at the Stock Exchange settlement at the middle of May there was something approaching to a panic, and a large number of failures took place. This apprehensive feeling, however, did not last long. No serious trade difficulties did supervene, and bankers, gaining confidence, began to lend again as usual, while, attracted by the temporary dearness of money, gold flowed in from abroad. By the beginning of June affairs had so settled down that the Bank was able to reduce its rate to 3 per cent., that movement being followed a week later by a reduction to $2\frac{1}{2}$ per cent. Until the end of July there was another period of quietude. Then, however, the effects of the currency crisis that in the meantime had broken out in the United States began to be felt. As has already been said, gold had been shipped in large quantities from the United States in the early part of the year. This outflow was in the main due to the operation of the Sherman Act, and as it was from the stock of gold in the Treasury that the bulk of the metal was taken, that became so reduced that the ability of the Treasury to maintain gold payments came to be seriously questioned. The natural outcome of this doubt was that gold

began to be hoarded; then the banks, finding their resources curtailed, had to restrict their loans and advances; many industrial concerns that had been largely carried on with borrowed money were thus forced to suspend payment, and then a panic set in, with the usual result, that money of all kinds was hoarded, and for a time a serious currency famine prevailed. To relieve this, large demands were made upon the stocks of gold upon this side, and as both the Bank of France and the Bank of Germany took measures to guard their stores of metal, it was by the Bank of England that the brunt of these demands had to be borne. Accordingly, it was compelled at the beginning of August to raise its rate to 3 per cent. A week later a further movement to 4 per cent. was made, that being followed in a fortnight's time by a fresh advance to 5 per cent. This comparatively high rate served not only to put a stop to the gold withdrawals, but also to attract gold hither, and by the middle of September the Bank had so strengthened itself that it was able again to lower its rate first to 4, and then, after a week's interval, to $3\frac{1}{2}$ per cent. Two weeks later—on 5th October—the rate was further moved down to 3 per cent., and at that it has stood during the past three months. The influences affecting the money market have thus all through the year been, so to speak, extraneous. The home demand for money has throughout been on a very restricted scale, owing to the depression of trade and the deadness of Stock Exchange speculation, and all the impulses in one direction and the other by which rates have been affected have originated abroad. The following is our customary comparative table of rates, &c. :—

	1893.	1892.	1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.
Change bank rate	twelve	four	twelve	eleven	eight	nine	seven	seven	seven	seven
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Highest „	5	$3\frac{1}{2}$	5	6	6	5	5	5	5	5
Lowest „	$2\frac{1}{2}$	2	$2\frac{1}{2}$	3	$2\frac{1}{2}$	2	2	2	2	2
Average „	$3\frac{1}{4}$	$2\frac{9}{11}$	$3\frac{5}{11}$	$4\frac{10}{4}$	$3\frac{14}{10}$	$3\frac{6}{3}$	$3\frac{6}{-}$	$3\frac{-}{4}$	$2\frac{16}{9}$	$2\frac{19}{2}$
Average market rate best three months' bills	$2\frac{2}{2-}$	$1\frac{9}{5}$	$2\frac{10}{-}$	$3\frac{13}{11}$	$2\frac{15}{6}$	$2\frac{7}{-}$	$2\frac{7}{3}$	$2\frac{1}{-}$	$2\frac{-}{9}$	$2\frac{8}{1}$
Market below bank ..	$1\frac{9}{4}$	$1\frac{-}{6}$	$1\frac{5}{11}$	$1\frac{6}{5}$	$1\frac{9}{4}$	$1\frac{9}{3}$	$1\frac{8}{9}$	$1\frac{9}{4}$	$1\frac{6}{-}$	$1\frac{1}{1}$

European Rates of Discount per Cent. per Annum, 1893.

Cities.	Beginning of Months of 1893.												
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Ave.
<i>London.</i>	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
Bank rate	3	2½	2½	2½	3	4	2½	3	5	3	3	3	3·07
Open market	1¼	1½	1½	1½	2¼	2½	1¼	2½	3½	1½	2½	2½	2·10
<i>Paris.</i>													
Bank rate	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2·50
Open market	2¼	2¼	1½	2¼	2¼	2	2¼	2½	2	2¼	2½	2½	2·22
<i>Vienna.</i>													
Bank rate	4	4	4	4	4	4	4	4	4	5	5	5	4·24
Open market	3½	3	3	3	3½	3½	3½	3½	4	4½	4½	4½	3·73
<i>Berlin.</i>													
Bank rate	4	3	3	3	3	4	4	4	5	5	5	5	4·08
Open market	1½	1¼	1½	2	3	2¼	3½	4	4½	4½	4½	4½	3·18
<i>Frankfort.</i>													
Bank rate	4	3	3	3	3	4	4	4	5	5	5	5	4·08
Open market	2¼	1½	1½	2½	2½	2¼	3½	3½	4½	4½	4½	4½	3·30
<i>Amsterdam.</i>													
Bank rate	2½	2½	2½	2½	2½	3	3	3	5	5	5	4	3·40
Open market	2½	2½	2	1½	2¼	2¼	2½	2¼	3½	4¼	4½	3¼	2·85
<i>Brussels.</i>													
Bank rate	2½	2½	2½	2½	2½	3	3	3	3	3	3	3	2·83
Open market	1½	1½	1½	1½	1½	2½	2½	2½	2½	2½	2½	2½	2·24
<i>Hamburg.</i>													
Bank rate	4	3	3	3	3	4	4	4	5	5	5	5	4·08
Open market	1½	1¼	1½	2½	2½	2½	3½	3½	4	4½	4½	4½	3·20
<i>St. Petersburg</i>													
Bank rate	4½	4½	4½	4½	4½	4½	4½	4½	4½	5	5	5	4·70
Open market	4¼	4¼	4¼	4¼	4¼	4½	4½	4½	4½	4¼	5½	5½	4·63

“Upon the movement in the silver market during the year, Messrs. Pixley and Abell report as follows. It may, however, be well to remind readers that at the beginning of this year the minimum of 1s. 3¼d. for council drafts was abandoned, and that the Government have decided against the proposal to impose an import duty on silver:—

“From January until 23rd June the changes in silver were comparatively unimportant, and, although many rumours were current as to probable action on the part of the Indian Government to place exchange on a more permanent basis, prices ranged between 37½d. and 38½d. During this period the India council were selling their bills and transfers at from 1s. 2½d. to 1s. 2¾d., the sales usually showing a slow but regular improvement. On 26th June it became known in London that the Indian mints were to be closed to the free coinage of silver, and this was immediately followed by complete panic, and extreme pressure to sell at any price came from all parts, but more particularly from America. We give here the daily quotations, as likely to be of interest: 19th June, 38½d.; 20th June, 38½d.; 21st June, 38¼d.; 22nd June, 38d.; 24th June, 37½d.; 26th June, 36d.; 27th June, 35d.; 28th

June, 34*d.*; 29th June, 31½*d.*; 30th June, 30½*d.*; 1st July, 33½*d.*; 4th July, 34½*d.*; 5th July, 34¾*d.* On 30th June business was also done at 29½*d.*, 29¾*d.*, and 30*d.* Accompanying the news of the closing of the mints, it was also announced that exchange would be fixed at 1*s.* 4*d.* per rupee, with the result that Indian rates at once nearly touched this figure, and on 28th June were actually at 1*s.* 4*d.* Indian buyers then thought that no offers under the fixed rate would be entertained by the Indian Council, but on 1*s.* 3¾*d.* being accepted, exchange rates at once fell away again. A rapid recovery ensued in silver, and for the first time China became an important buyer of bar silver, and continued to take large sums until late in the year. Between July and October the question of the repeal of the Sherman Act by the senate was much discussed, but the struggles of the silver party were so prolonged that in many quarters a compromise was believed likely. The opponents of silver ultimately gained a complete victory. The silver market of course fell to pieces, and 31½*d.* was speedily touched. During this period hardly an application was made for council drafts, but a fresh minimum was fixed at 1*s.* 3¼*d.*, and some unimportant sales were made at this rate. Good inquiry both for India and China caused silver to rise to 32*d.* to 32½*d.*, at which rates the banks became so independent of the usual council remittances that it became likely that an import duty would be imposed on silver entering India. Towards the end of November China ceased buying, but then large shipments were sent to India merely as merchandise, and aided by extensive speculative buying, prices remained fairly steady. Many of the later shipments to China were diverted to India, the import duty being regarded as imminent. It is noteworthy that the highest and lowest prices of the year were on 19th June, 38¾*d.*, and 30th June, 30½*d.*, within eleven days of each other.

"The monthly fluctuations during the past five years are shown in the following table:—

Monthly Fluctuations in Price of Bar Silver.

	1893.		1892.		1891.		1890.		1889.	
	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>
January	38 ⁹ / ₁₆	38 ⁵ / ₈	43 ³ / ₄	41 ³ / ₄	48 ³ / ₈	46 ⁷ / ₈	44 ⁷ / ₈	44 ¹ / ₈	42 ¹¹ / ₁₆	42 ³ / ₈
February.....	38 ¹ / ₂	38 ¹ / ₄	41 ¹⁵ / ₁₆	41 ¹ / ₈	46 ³ / ₄	44 ¹ / ₂	44 ⁵ / ₈	43 ¹¹ / ₁₆	42 ³ / ₄	42 ¹ / ₂
March	38 ⁵ / ₈	37 ⁹ / ₁₆	41 ⁵ / ₈	39	45 ⁵ / ₁₆	44 ³ / ₈	44 ³ / ₈	43 ³ / ₂	42 ⁵ / ₈	42 ¹ / ₄
April	38 ⁵ / ₁₆	38	40 ¹ / ₈	39 ¹ / ₄	45	43 ⁷ / ₈	48	43 ⁷ / ₈	42 ⁵ / ₁₆	42 ¹ / ₁₆
May	38 ⁹ / ₁₆	37 ⁵ / ₈	40 ³ / ₈	39 ¹ / ₁₆	45 ¹ / ₈	44 ¹ / ₂	47 ¹ / ₂	46	42 ¹ / ₄	41 ¹ / ₈
June	38 ¹ / ₄	30 ¹ / ₂	41 ¹ / ₈	40 ¹ / ₁₆	46	44 ¹ / ₄	49	46 ¹ / ₄	42 ³ / ₁₆	42
July.....	34 ³ / ₄	32 ¹ / ₂	40 ¹ / ₄	39 ¹ / ₁₆	46 ³ / ₈	45 ³ / ₈	50 ⁷ / ₈	47 ⁹ / ₁₆	42 ⁵ / ₁₆	42
August	34 ³ / ₈	32 ¹ / ₁₆	39 ¹ / ₁₆	37 ⁷ / ₈	46 ¹ / ₈	45 ¹ / ₁₆	54 ¹ / ₂	50 ³ / ₄	42 ⁹ / ₁₆	42 ¹ / ₄
September	34 ¹ / ₂	33 ³ / ₄	38 ⁵ / ₁₆	38 ⁵ / ₈	45 ⁵ / ₁₆	44 ¹ / ₂	54 ³ / ₈	50	42 ¹ / ₁₆	42 ³ / ₈
October	34 ¹ / ₈	31 ¹ / ₂	39 ⁵ / ₈	38 ¹ / ₈	45	44 ¹ / ₁₆	51 ¹ / ₂	48 ¹ / ₈	43 ¹ / ₂	42 ³ / ₈
November	32 ³ / ₄	31 ¹ / ₂	39 ¹ / ₄	38 ³ / ₄	44 ¹ / ₁₆	43 ¹ / ₂	48 ³ / ₄	45	44 ³ / ₈	43 ¹ / ₂
December	32 ⁵ / ₁₆	31 ³ / ₄	39 ³ / ₁₆	37 ¹⁵ / ₁₆	44 ¹ / ₄	43 ¹ / ₂	49 ¹ / ₂	47 ¹ / ₄	44 ³ / ₈	43 ³ / ₄
Yearly avge.	35 ⁵ / ₈		39 ¹ / ₁₆		45 ¹ / ₁₆		47 ¹ / ₁₆		42 ¹ / ₁₆	
Highest price	38 ³ / ₄		43 ³ / ₄		48 ³ / ₄		54 ³ / ₈		44 ³ / ₈	
Lowest „	30 ¹ / ₂		37 ¹⁵ / ₁₆		43 ¹ / ₂		43 ¹ / ₁₆		41 ¹ / ₁₆	

"The conspicuous feature of stock exchange business throughout the past year was the lack of confidence that prevailed in regard to all securities, except of the steadiest and safest description. This feeling was already in existence at the beginning of the year, but instead of wearing off gradually, as is the usual process after a panic, it was deepened and intensified by the principal incidents that went to make up the financial history of 1893. The patience of investors has been sorely tried by the revelations that have been made in connection with the various so-called trust companies, so many of which came into existence while the speculative mania was at its height. The Companies Winding up Act has, in this connection, proved a useful measure, the public examinations of directors and officials having exposed some of the more doubtful methods of certain groups of financiers, and rendered possible a more thorough investigation into the past history of the concerns which have come to grief. While not altogether preventing the inception of similar enterprises in the future, the Act has, by bringing about these exposures, laid bare some of the pitfalls into which investors may be lured, and has thus put them upon their guard. In addition to this the knowledge that so much publicity and responsibility may be forced upon directors and promoters should tend to prevent the foisting of doubtful or grossly over-capitalised ventures upon the public to the extent that has hitherto prevailed. The revelations made, however—and it is to be feared that some of the worst have still to come—have thrown discredit upon domestic joint stock enterprise generally; and when investors have looked abroad, the prospects of safe employment for money have proved even more discouraging. It is true that an agreement has been arrived at for a reduced interest payment on the Argentine debt, but mere paper arrangements are not of much use unless there is a reasonable prospect of their being carried out. That a substantial improvement is observable in the economic condition of the Argentine Republic is beyond doubt, but the reckless and improvident character of the Governments which have hitherto had the conduct of affairs there engenders a want of confidence in any financial arrangement into which they may enter. Brazil, too, whose securities are largely held in this country, has for a long time past been in a state of civil war, and no matter which party comes out at the top, it is evident that the resources of the country have been greatly crippled, and its capacity for meeting its external obligations very considerably weakened. As a whole the character of South American finance accords with its politics, unstable and uncertain to the last degree. In no case, except perhaps Chili, is there any prospect for the investment of money with any reasonable amount of safety. In Europe the financial conditions have been equally unsatisfactory. Spain has only managed to pay her way by means of borrowing from the State bank, aided by numerous shifts and expedients; and with the additional expenditure she has recently incurred through the fighting in Morocco, it is difficult to see how she is to overcome her increasing financial difficulties, unless she can succeed in floating a

new external loan. In Italy, also, owing to excessive expenditure, the monetary arrangements are in a state of chaos, and her statesmen find themselves face to face with the alternative of a radical reduction of expenditure or default. Greece has already adopted the latter alternative, and that under circumstances not altogether creditable to her good faith, as revenues already hypothecated to the service of debt were diverted to other purposes with no other ceremony than a simple intimation of the fact in the Greek Chambers. The energetic protests on the part of influential committees, representing bondholders in all parts of Europe, have, however, brought the Greek Government to a better sense of what is due to their creditors, and a distinct promise has been made that no final settlement will be attempted without first consulting the bondholders. With the exception of French and German securities, which are held almost entirely at home, Russian stocks are practically alone amongst European Government issues in maintaining the position they held at the end of 1892. Russians are held largely in France, and have received special support during the past year in consequence of the political *rapprochement* between the two countries.

"The year has been a disastrous one for American railroads. The industrial and monetary crisis which preceded the repeal of the Sherman Silver Act, by increasing the difficulty of carrying the heavy floating debts with which many American railways are burdened, forced a number of them into the hands of receivers. And in connection with some of these receiverships there were proceedings which have demonstrated with renewed force—if such a lesson were needed—the unsuitability of these securities for investment purposes. The crisis which occurred in Australia, while it involved a considerable lock up of money in the suspended banks, did not affect the stock exchange greatly, except with regard to the shares of companies immediately connected with the colonies, and a temporary though considerable decline in the quotations for Australian Government stocks. The lock up, however, was of moneys that were to a great extent already on deposit for considerable periods, and the probability is that the catastrophe, by diverting that portion of the flow of surplus funds which had been supplying the deposits for colonial banks into other channels, strengthened the demand for the better class of stock exchange securities. The whole circumstances of the year, as briefly recounted above, increased this demand for gilt-edged securities, with the result that consols, British corporation stocks, and home railway debentures and preference stocks had throughout a rising tendency, and the new issues of corporation stocks that were offered were readily taken up. So also were some colonial issues offered towards the end of the year, when the credit of the colonies had a sharp recovery, and prices of the Government stocks reached about as high a point as had been touched during the year. The ordinary stocks of most of the principal home railways were maintained at a good level, even during the long strike of coal miners, which has proved so disastrous a feature of the railway accounts for the half year. Investors evidently recog-

nised that the circumstance was entirely a fortuitous one, which did not affect the permanent earning capacity of the railways, and no marked fall in ordinary stocks was recorded at any time during the strike.

“Not since 1876 were the applications for new capital on so small a scale as in 1893. The total amount of the new issues was only 49,141,000*l.*, which compares with the totals in immediately preceding years thus:—

Capital Created and Issued.

	In England.	England and Elsewhere.	Total.
	£	£	£
In 1893	39,181,438	9,959,750	49,141,188
'92	53,197,091	27,940,086	81,137,177
'91	80,239,270	24,355,640	104,594,910
'90	125,898,000	16,667,000	142,565,000
'89	178,930,000	28,107,000	207,037,000

The capital issues of the year, so far as they can be classified, are summarised in the following statement:—

	£
Foreign governments	2,968,000
Colonial loans	12,356,257
British corporation stocks	6,035,904
Foreign and colonial corporation loans	3,147,372
Railway companies, British	2,842,650
„ colonial and foreign	9,325,456
Mining companies	1,191,284
Banking and finance companies	964,275
Pneumatic tyre and cycle companies	995,000
Land and exploration companies	883,500
Lighting and water „	971,250
Tramway and omnibus „	248,500
Music hall, hotel, &c. „	1,241,430
Industrial and miscellaneous companies	5,970,310
	<u>49,141,188</u>

The sole application on the part of foreign Governments during the year was that of Brazil for the Western of Minas railway guaranteed loan. The largest separate total is that of colonial governments, and these applications have consisted almost entirely of inscribed stock, issued for the repayment of pre-existing loans or debentures bearing a higher rate of interest, or to pay off maturing Treasury bills. The sum applied for by home municipal authorities is considerable in the aggregate, but was mainly contributed by comparatively small issues. The usual rate of interest offered on these corporation stocks is 3 per cent., and in such request is this class of investment that the stock has seldom been allotted at a lower minimum than 98 per cent. The capital raised

by British railways was chiefly new preference stock, issued to meet the growing capital requirements of the great railways, and that applied for by foreign railway companies partook of much the same character, consisting mainly of well secured American railroad bonds. Of the remainder, nearly 1,000,000*l.* was devoted to the cycle tyre 'boom' in the early part of the year; while of the amount described as miscellaneous, a large portion was in the form of debentures or preferences issued by existing companies, the reception accorded to entirely new undertakings not giving much encouragement for further promotions.

"In the amount of calls for capital previously subscribed, there was also a large decrease last year, as the following ten years' record will show:—

	Capital Created and Issued.			Actual Money Calls.		
	In England.	England and Elsewhere.	Total.	Ir England.	England and Elsewhere.	Total.
	£	£	£	£	£	£
In 1893....	39,181,438	9,959,750	49,141,188	33,750,972	8,201,937	41,952,909
" '92....	53,197,091	27,940,086	81,137,177	47,212,458	12,049,601	59,262,059
" '91....	80,239,270	24,355,640	104,594,910	66,809,596	9,234,200	76,043,796
" '90....	125,898,000	16,667,000	142,565,000	120,717,000	20,290,000	141,007,000
" '89....	178,930,000	28,107,000	207,037,000	152,012,000	15,791,000	167,804,000
" '88....	140,758,000	19,497,000	160,255,000	125,864,000	11,388,000	137,252,000
" '87....	96,770,000	14,439,000	111,209,000	84,161,000	9,507,000	93,668,000
" '86....	93,946,000	7,927,000	101,873,000	70,342,000	17,134,000	87,476,000
" '85....	55,558,000	22,414,000	77,972,000	62,824,000	15,051,000	77,875,000
" '84....	91,520,000	17,511,000	109,031,000	74,255,000	16,348,000	90,603,000

II.—*Agricultural Returns of 1893.*

THE two following tables are taken from the preliminary returns published by the Board of Agriculture in advance of the annual Volume of Agricultural Statistics. This latter volume for 1893, has not, at the time of our going to press, yet been published; and some remarks on the past year will consequently be printed in the next number of the Journal. But enough will be gleaned from Table II, to show the effect of the drought on the crops in England; while in Scotland, where there was no excessive want of rain, the produce has been above the normal.

TABLE I.—*Acreage under each kind of Crop, Bare Fallow, and Grass; and Number of in each Division of Great Britain; with similar Particulars*

	England.		Wales.		Scotland.	
	1893.	1892.	1893.	1892.	1893.	1892.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Total area of land and water ^a	32,509,322	32,509,322	4,779,343	4,779,343	19,453,843	19,453,843
Total acreage under all kinds of crops, bare fallow, and grass ^b	24,897,562	24,924,204	2,855,972	2,859,803	4,890,175	4,901,543
Corn Crops—						
Wheat.....	1,798,869	2,102,969	54,562	55,278	44,093	61,592
Barley or bere	1,751,602	1,709,587	111,851	114,520	211,644	212,703
Oats	1,914,373	1,765,463	240,865	233,399	1,016,518	998,683
Rye.....	47,886	38,758	1,301	1,352	7,242	7,993
Beans.....	229,342	294,680	1,637	1,570	13,975	15,060
Peas	208,171	191,960	1,266	1,264	1,042	1,200
Total	5,949,743	6,103,417	411,482	407,383	1,294,514	1,297,231
Green Crops—						
Potatoes.....	355,553	349,718	35,024	36,510	137,244	139,133
Turnips and swedes.....	1,424,093	1,390,006	71,887	70,949	479,755	476,208
Mangold.....	338,543	352,030	7,484	7,917	982	1,288
Cabbage, kohlrabi, and rape.....	146,116	141,600	1,819	1,928	8,267	7,464
Vetches or tares	161,314	184,286	2,058	2,019	12,120	12,373
Other green crops	101,620	92,468	1,249	1,352	2,278	2,328
Total	2,527,239	2,510,108	119,021	120,675	640,646	638,794
Clover, sainfoin, and grasses under rotation—						
For hay	1,496,467	1,574,178	168,403	179,069	382,138	382,115
Not for hay	1,178,804	1,146,186	149,432	159,299	1,194,386	1,231,955
Total	2,675,271	2,720,364	317,835	338,368	1,576,524	1,614,070
Permanent pasture or grass not broken up in rotation ^c						
For hay	3,606,918	3,834,923	499,009	491,863	164,553	162,840
Not for hay	9,521,460	9,202,048	1,499,397	1,491,067	1,201,230	1,175,409
Total	13,128,378	13,036,971	1,998,406	1,982,930	1,365,783	1,338,249
Flax.....	1,246	1,404	3	8	9	9
Hops	57,564	56,259	—	—	—	—
Small fruit.....	59,694	56,502	1,004	1,040	4,789	4,606
Bare fallow or uncropped arable land	498,427	439,179	8,221	9,399	7,910	8,584
Horses used solely for agriculture	No. 789,717	No. 802,044	No. 77,142	No. 78,638	No. 146,008	No. 146,289
Unbroken horses	333,877	319,163	57,218	57,568	50,799	47,506
Mares kept solely for breeding	50,215	47,939	12,984	12,621	6,567	6,314
Total of horses	1,173,809	1,169,146	147,344	148,827	203,374	200,109
Cows and heifers in milk or in calf	1,840,528	1,914,852	281,180	291,035	432,916	445,004
Other cattle—						
2 years and above.....	1,161,557	1,245,502	138,859	144,826	279,826	276,378
1 year and under 2	913,543	1,808,236	161,989	318,606	278,991	500,344
Under 1 year.....	828,431		156,580		226,276	
Total of cattle	4,744,059	4,968,590	738,608	754,467	1,218,009	1,221,726
Ewes kept for breeding	6,151,557		1,137,837		2,839,282	
Other sheep—						
1 year and above	4,102,075	10,917,886	937,375	2,157,055	1,871,613	4,882,108
Under 1 year.....	6,551,648	7,075,870	1,026,678	1,040,446	2,662,269	2,661,339
Total of sheep	16,805,280	17,993,756	3,101,890	3,197,501	7,373,164	7,543,447
Sows kept for breeding	259,676	— ^h	33,665	— ^h	15,381	— ^h
Other pigs	1,533,780	— ^h	167,011	— ^h	104,017	— ^h
Total of pigs	1,793,456	1,828,542	200,676	197,302	119,398	112,015

^a Not including tidal water.^b Not including nursery grounds, woods and plantations, or mountain and heath land.^c Exclusive of mountain and heath land.

horses, Cattle, Sheep, and Pigs; as returned upon the 5th June, 1893, and 4th June, 1892, for Ireland, and with Total for the United Kingdom.

Great Britain.		Ireland.		United Kingdom, including Isle of Man and Channel Islands.		
1893.	1892.	1893.	1892.	1893.	1892.	
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
6,742,508	56,742,508	20,706,258	20,706,258	77,642,099	77,642,099	Total area of land and water ^a
2,643,709	32,685,550	15,208,414	15,162,521	47,979,698	47,977,903	{ Total acreage under all kinds of crops, bare fallow, and grass ^b
1,897,524	2,219,839	54,988	75,344	1,955,213	2,268,607	Corn Crops—
2,075,097	2,036,810	168,984	175,612	2,251,293	2,220,243	Wheat
3,171,756	2,997,544	1,248,360	1,226,307	4,435,944	4,238,036	Barley or bere
55,929	48,103	13,455	13,120	69,526	61,392	Oats
244,954	311,310	3,280	3,973	248,304	315,413	Rye
210,479	194,424	326	460	210,900	195,010	Beans
7,655,739	7,808,031	1,489,393	1,494,816	9,171,180	9,328,701	Peas
527,821	525,361	723,536	739,942	1,262,674	1,276,835	Total
1,975,235	1,937,163	302,820	300,445	2,286,473	2,245,998	Green Crops—
347,009	361,235	e 47,025	* 51,562	394,543	413,334	Potatoes
156,202	150,092	f 46,897	f 47,770	203,270	198,995	Turnips and swedes
175,492	198,678	5,358	5,390	181,152	204,399	Mangold
105,147	96,148	27,891	29,752	134,643	127,654	Cabbage, kohl-rabi, and rape
3,286,906	3,269,577	1,153,527	1,174,861	4,462,755	4,467,115	Vetches or tares
2,047,008	2,135,362	642,056	624,095	2,701,846	2,772,065	Other green crops
2,532,632	2,537,440	658,112	628,884	3,214,503	3,201,391	Total
4,569,630	4,672,802	1,300,168	1,252,979	5,916,349	5,973,456	Clover, sainfoin, and grasses under rotation—
4,270,480	4,489,626	1,525,108	1,520,370	5,803,011	6,018,308	For hay
2,222,087	11,868,524	9,650,736	9,621,917	21,897,370	21,515,018	Not for hay
6,492,567	16,358,150	11,175,844	11,142,287	27,700,381	27,533,326	Total
1,258	1,421	67,444	70,642	68,715	72,065	Permanent pasture or grass not broken up in rotation— ^c
57,564	56,259	—	—	57,565	56,259	For hay
65,487	62,148	—	—	65,845	62,547	Not for hay
514,558	457,162	22,038	26,936	536,908	484,434	Total
No.	No.	No.	No.	No.	No.	Flax
1,012,867	1,026,971	—	—	—	—	Hops
441,894	424,237	—	—	—	—	Small fruit
69,766	66,874	—	—	—	—	Bare fallow or uncropped arable land
1,524,527	1,518,082	545,180	539,788	2,079,587	2,067,549	Horses used solely for agriculture
2,554,624	2,650,891	1,441,175	1,450,674	4,014,055	4,120,451	Unbroken horses
1,580,242	1,666,706	1,097,483	1,047,623	2,683,415	2,719,615	Mares kept solely for breeding
1,354,523	2,627,186	969,244	2,032,728	2,334,049	4,679,351	Total of horses
1,211,287	—	956,124	—	2,176,035	—	Cows and heifers in milk or in calf
6,700,676	6,944,783	4,464,026	4,531,025	11,207,554	11,519,417	Other cattle—
10,128,676	17,957,049	2,681,006	2,881,756	19,760,056	20,881,837	{ 2 years and above
6,911,063	10,777,655	1,740,587	1,945,946	12,014,768	12,760,971	{ 1 year and under 2
10,240,595	—	—	—	—	—	Under 1 year
27,280,334	28,734,704	4,421,593	4,827,702	31,774,824	33,642,808	Total of cattle
308,722	—	—	—	—	—	Ewes kept for breeding
1,804,808	—	—	—	—	—	Other sheep—
2,113,530	2,137,859	1,152,365	1,115,888	3,278,030	3,265,898	{ 1 year and above
—	—	—	—	—	—	Under 1 year
—	—	—	—	—	—	Total of sheep
—	—	—	—	—	—	Sows kept for breeding
—	—	—	—	—	—	Other pigs
—	—	—	—	—	—	Total of pigs

^d Furnished by the Registrar-General for Ireland.

^e Cabbage and rape only.

^b Not separately distinguished in 1892.

^c Including beetroot.

^f Not separately returned in Ireland.

TABLE II.—*Preliminary Statement of Estimated Produce of Wheat, Barley, and Oats, in Great Britain.*

WHEAT.

	Estimated Total Produce.		Acreage.		Estimated Average Yield per Acre.		Estimated Yield of a Normal Season, calculated in 1885.
	1893.	1892.	1893.	1892.	1893.	1892.	
	Bshls.	Bshls.	Acres.	Acres.	Bshls.	Bshls.	
England	46,429,407	55,107,186	1,798,869	2,102,969	25'81	26'20	28'94
Wales	1,205,006	1,318,763	54,562	55,278	22'09	23'86	21'53
Scotland	1,612,884	2,134,983	44,093	61,591	36'58	34'66	32'85
Great Britain.	49,247,297	58,560,932	1,897,524	2,219,838	25'95	26'38	28'80
BARLEY.							
England	49,032,708	59,511,003	1,751,602	1,709,587	27'99	34'81	34'35
Wales	2,802,971	3,350,862	111,851	114,520	25'06	29'26	27'78
Scotland	7,699,698	7,622,732	211,644	212,703	36'38	35'84	34'77
Great Britain.	59,535,377	70,484,597	2,075,097	2,036,810	28'69	34'61	34'02
OATS.							
England	67,164,434	73,266,495	1,914,373	1,765,463	35'08	41'50	42'10
Wales	7,452,468	7,976,830	240,865	233,399	30'94	34'18	32'48
Scotland	38,270,477	35,051,664	1,016,518	998,683	37'65	35'10	35'75
Great Britain.	112,887,379	116,294,989	3,171,756	2,997,545	35'59	38'80	39'04

III.—*The International Statistical Institute at Chicago.*

THE International Statistical Institute, which is the successor of the International Statistical Congresses held at various periods between 1853 and 1876, was founded at the Jubilee meeting of the Royal Statistical Society in 1885.¹ It consists of a maximum of 150 (paying) members, besides a certain number of honorary members; the representatives of any one nation not being allowed to exceed 30. All the members are either officials holding various positions as statistical experts under their respective Governments, municipalities, &c., or are professors and other non-officials well known for their researches in statistical science. As the number of members is limited, and as there is considerable competition for vacant spaces, there is every reason to believe that the Institute will remain, as it is now, a society consisting of specially qualified and experienced statisticians only.

¹ A full account of the foundation of the Institute will be found in the *Jubilee Volume of the Royal Statistical Society*, pp. 284—330.

The Institute meets biennially, and its objects, as laid down in the statutes, revised at the meeting at Rome in 1887, are to advance the progress of administrative and scientific statistics (1) by a study of the most suitable methods to secure as much uniformity as possible in statistical schedules and tables, so as to render the results for different countries comparable, (2) by making recommendations to Governments concerning information to be obtained by statistical observation, and (3) by its publications. Various committees of specialists (members of the Institute) have been appointed. Meetings have now been held at Rome in 1887, at Paris in 1889, at Vienna in 1891, and lastly at Chicago in 1893. The President of the Institute is Sir Rawson W. Rawson, K.C.M.G., but as he was unable to attend, General F. A. Walker (Hon. F.S.S.) was elected "President-Adjoint." The attendance was below that at the meetings held in Europe, the members present numbering twenty-two, of whom twelve were Americans. Of the Europeans, three were British: Mr. A. E. Bateman, C.M.G., Major P. G. Craigie, and Mr. F. Hendriks, the two former attending in an official capacity. The local invitations issued by the President were on this occasion responded to by fifty-six gentlemen, of whom forty-nine were Americans. The meeting was held from the 11th to the 16th September, in the halls of the University of Chicago.

The proceedings opened on the 11th with addresses of welcome by President Harper (Principal of the University of Chicago), General F. A. Walker (in his capacity of President of the American Statistical Association), and the Hon. Carroll D. Wright (representing the United States Government). Replies on behalf of the foreign delegates were made by M. E. Levasseur, Signor L. Bodio, Mr. A. E. Bateman, Professor H. N. Laspeyres, and M. A. N. Kiaer. The session was then declared open, and the remainder of the proceedings consisted in the reading of papers on different subjects, and the receipt of reports from the various committees summarising what had been done during the interval since the last session, and containing recommendations for future work.

The papers and reports were taken systematically at the sittings of the general assembly; the morning of the 12th September was devoted to commerce, finance, and prices, and the afternoon to education and crime. On the Wednesday (13th) the members of the Institute were the guests of the American Economic Association, which held its meeting on that day. Another morning (the 14th) was taken up with agriculture, labour, and railways; statistics of population occupied the afternoon, and on the 15th, five papers, all by Americans, were read on anthropometry. The business terminated with the election of officers, the appointment or re-appointment of standing committees, the adoption of reports and resolutions, &c. The Committees also held meetings during the same week.

The first report submitted was that on the "Comparability of Trade Statistics of various Countries"² (drawn up by Mr. Bateman,

² This will be printed in the next number of the *Journal*.

the *rapporteur* of the Committee). It was noted that some progress had been made towards the similar registration of imports and exports in various countries, the chief difference still being that the United States, as well as some of our own Colonies, value their imports in accordance with declarations made at the port of lading, instead of on their arrival, and that the United Kingdom is still the only country where the real market values of the imports and exports at the time of arrival or departure are given, all foreign countries adopting an average based on former prices (generally those of the preceding year). This Committee was re-appointed, its attention being specially directed to urging that imports should be valued as they lie at the port of arrival, thus including freight, and exports at the port of shipment; that the abstract classification recently proposed for the British empire, which would be of advantage for industrial purposes, be recommended for adoption, and that a uniform list of about fifty of the principal articles of external trade be prepared, so as to admit of international comparison as to quantity and value. M. A. N. Kiaer brought up a report of the Committee on Maritime Navigation, entitled "Tonnage admeasurement," recommending the adoption of some scheme by which the distance traversed, as well as the tonnage of ships, might be registered. He showed that a little was already done in this direction by the separation, in the British trade returns, of vessels coming from northern and southern Russian ports, and of those from the Atlantic and Pacific coasts of North America. A similar separation might equally be made in the case, for instance, of France, a distinction applying to vessels from Atlantic and Mediterranean ports. What is required, in fact, is the "carrying energy" involved, as expressed in "ton-miles."

The Report of the Committee on Primary Education (*rapporteur*: M. E. Levasseur), after giving particulars of the educational position of the United States and of some other countries (most European nations having been already dealt with in previous reports), recommended that every State should publish statistics of the finances of Government schools, and also the number of primary schools, teachers, and pupils, together with some other information, and recommending also the exact definition of such terms as *school*, *class*, *teacher*, and *pupil*. The report was followed by papers on moral and social statistics, noteworthy among which were those of Signor L. Bodio (General Secretary of the Institute) on criminal statistics, and the international variation of the records of habitual crime, and of Mr. F. H. Wines on the recent statistics of crime in the United States.

Major Craigie (in conjunction with M. A. de Foville) is *rapporteur* of the Committee on Landed Property charged with the task of considering the means of obtaining reliable comparisons between the property statistics of different countries, especially as regards land holdings (their number and extent, the number of owners and occupiers of land, modes of tenure, &c.). In his report, Major Craigie stated that considerable progress had been made in certain countries towards uniformity in agricultural statistics. Elaborate investigations had been made in connection with the

United States Census of 1891, but the results were not yet fully worked out.³ Enough was known, however, to indicate that, since a former return on this subject, there had been a very strong tendency towards the substitution of tenant farming for owner farming. The question of an international unit of area in matters of *grande* and *petite culture* was also discussed, as were the valuation of land, and the systems adopted for estimates of agricultural production and the recording of quantities for comparison by measure or by weight. A separate committee had been appointed at Vienna in 1891 to consider the latter branches of this subject, but both were at the Chicago meeting merged into a single and enlarged Committee.

Another important contribution dealing with agriculture was read by Mr. J. R. Dodge, on the mortgage indebtedness of the United States, and he also presented diagrams showing the local value and yield of crops per acre in the United States. A paper was read by Mr. John Hyde on "Geographical Concentration: a historical feature of American agriculture," in which the author traced the changes in the amount of cereals grown in different parts of the United States, and pointed out how the cultivation of particular products was to a great extent confined to a few particular States.

Four papers were read on the currency and finance of the United States, the most important being by General F. A. Walker; and several proposals were made for the increased issue of notes. Professor F. W. Taussig contributed a valuable paper on "Results of Recent Investigations of Prices in the United States," and it was ultimately resolved to considerably extend the existing Committee on Prices, and to urge upon Governments the desirability of securing uniformity in the tabulation of complete statistics of prices of commodities.

Several papers, as well as a report from a Committee, were read on the subject of Interior Transportation.

Census statistics, from the point of view of international comparison, occupied much attention, more especially the classification of occupations, as to which Dr. Jacques Bertillon had prepared a report on the nomenclature of occupations and causes of death, while a scheme was approved, dividing occupations into 61, 206, or 499 heads, the two latter classifications being sub-divisions of the former. Dr. J. Körösi sent a proposal for a standard of international mortality and mortality indices, with special reference to the disturbing influences of unequal age distribution. Papers were read by M. V. Turquan on "Statistics relating to the female population of France," by Mr. D. R. Dewey on "Statistics of occupations in the United States;" and a novel subject was that of Professor Richmond Mayo-Smith, who dealt with the assimilation of races and nationalities, basing his observations on the peoples of the United States, and showing that they were being rapidly assimilated with each other (the negro being excepted).

³ See Mr. G. K. Holmes's article in the *Journal* for September, 1893 (vol. lvi, part 3).

IV.—*Prices of Commodities in 1893.* By A. SAUERBECK, Esq.

THE following table shows the course of prices of forty-five commodities during the last fifteen years as compared with the standard period of eleven years, 1867-77, which in the aggregate is equivalent to the average of the twenty-five years 1853-77 (see the Society's *Journal*, 1886, pp. 592 and 648, and 1893, pp. 220 and 247) :—

Summary of Index Numbers. Groups of Articles, 1867-77 = 100.

	Vegetable Food (Corn, &c.).	Animal Food (Meat, &c.).	Sugar, Coffee, and Tea.	Total Food.	Minerals.	Textiles.	Sundry Materials.	Total Materials.	Grand Total.	Silver.*	Wheat Harvest.†	Average Price of Consols.‡	Average Bank of England Rate.‡
1879....	87	94	87	90	73	74	85	78	83	84.2	64	97½	2½
'80....	89	101	88	94	79	81	89	84	88	85.9	93	98½	2½
'81....	84	101	84	91	77	77	86	80	85	85.0	97	100	3½
'82....	84	104	76	89	79	73	85	80	84	84.9	100	100½	4½
'83....	82	103	77	89	76	70	84	77	82	83.1	93	101½	3½
1884....	71	97	63	79	68	68	81	73	76	83.3	103	101	3
'85....	68	88	63	74	66	65	76	70	72	79.9	108	99¼	3
'86....	65	87	60	72	67	63	69	67	69	74.6	93	100¼	3
'87....	64	79	67	70	69	65	67	67	68	73.3	110	101¾	3½
'88....	67	82	65	72	78	64	67	69	70	70.4	96	101	3½
1889....	65	86	75	75	75	70	68	70	72	70.2	103	98	3½
'90....	65	82	70	73	80	66	69	71	72	78.4	106	96½	4½
'91....	75	81	71	77	76	59	69	68	72	74.1	108	95¾	3½
'92....	65	84	69	73	71	57	67	65	68	65.4	91	96¾	2½
'93....	59	85	75	72	68	59	68	65	68	58.6	90	98½	3½
Ave.													
1884-93	66	85	68	74	72	64	70	69	71	72.8	101	99	3½
'78-87	79	95	76	84	73	71	81	76	79	82.1	97	99½	3½

* Silver 60.84 per oz. = 100.

† Wheat harvest in the United Kingdom, 1879-83, 28 bushels per acre = 100, from 1884-29 bushels = 100.

‡ Consols and bank rate actual figures, not index numbers; consols 2½ per cent. from 1889.

The index number for all commodities was 68, or the same as in the preceding year, and therefore 32 per cent. below the standard period, 14 per cent. below the ten years 1878-87, and 4 per cent. below the average of the last ten years. The articles comprised in the group of corn, which in 1892 had declined almost uninterruptedly, followed again a downward course, and their average is nearly 10 per cent. under the previous year. English wheat touched 24s. 8d. last year, and the average price (26s. 4d.) is the lowest recorded in the official returns issued since 1771.⁴ English barley was but little lower than in the previous year,⁵ but foreign

⁴ In order to find lower averages for wheat we have to go back to the year 1745, when according to the Eton returns it was 24s. 5d., and to 1744, when it was 22s. 1d. per Winchester quarter, which is about 3 per cent. smaller than the Imperial quarter.

barley declined heavily. Rice fell in November to 5s. 6d. for Rangoon, which is the lowest price of the century, and potatoes were on the average also cheaper than at any time since 1846, with which year my statistics commence. Animal food experienced scarcely any change in the aggregate, the medium and inferior classes of beef and mutton being as low, and pork fully as high as in the preceding year. Sugar rose till June, falling afterwards, and closing lower than a year ago. Brazil coffee ruled distinctly higher, but tea declined during the last eight months of the year, and the average import price is the lowest ever known. Minerals were on the whole rather cheaper; iron did not move much—independently of the corner for Scotch pig in February—but copper was a little lower, and tin declined sharply, being on the average about 10 per cent. under 1892. Lead suffered from the pressure of heavy supplies, and the average price was the lowest on record. Coals were very depressed until the time of the great strike, during which extreme rates were reached, best house coal commanding up to 32s. wholesale, and 41s. retail, the highest prices since 1873. The average export price of coals was still rather high, though considerably below the three preceding years. Textiles and sundry materials stood in the aggregate slightly above 1892. The average price of cotton for the whole year was a little higher than the abnormally low figure in 1892, but the closing prices were considerably lower than at the end of the preceding year. Flax and English lustre wool were dearer, merino wool was as cheap as in the previous year, and hemp was lower. Jute was low in the first half of the year, but advanced sharply later on. China silk rose somewhat, but in no comparison with the enormous rise for European silk in the Lyons market; both however lost more than the whole advance, and China fell to the lowest point on record. Tallow and palm oil were higher during the first three months, but declined afterwards; linseed oil, nitrate, and indigo were higher, and soda was lower than in 1892. Petroleum fell to 3½d. in November, the lowest price ever known.

Silver was fairly steady at about 38d. until the Indian mint was closed in June, when it fell to 29½—30d. It recovered part of the decline, and was worth between 33d. and 34d. from July to October, and about 32d. in November and December. The average price was 35½d. or 41½ per cent. below the old parity of 1 gold 15½ silver.

Among the years of depression which followed the trade activity of 1888 and 1889 and the crisis of 1890, the past year was in many respects perhaps the most disastrous of all, and adverse influences, such as have rarely been experienced, united to cause stagnation and distrust over the greater part of the world. The great strike in the Lancashire cotton trade was only settled at the end of March, but notwithstanding this stoppage in one of our greatest industries, there were some signs of a slight improvement in other branches here and in trade on the continent,

⁵ Barley, average price 25s. 7d.; it had been lower before, viz., 25s. 4d. in 1887, 24s. 9d. in 1851, 23s. 5d. in 1850, 21s. 10d. in 1822, and 17s. 6d. in 1780.

and even on the stock exchange it sometimes appeared as if a return of confidence was approaching. The statistical position of some articles looked rather favourable, as the great increase in production during the preceding years had at last been arrested. This was the case particularly in cotton and wool, sugar and iron. But on the other hand wheat continued to decline, and the agricultural distress was aggravated by the drought in spring and the consequent failure of the hay crop in this and several other countries. In April and May occurred the great banking crisis in Australia, and on the 26th June the Indian mint was closed for the coinage of silver, which increased the already existing difficulties in the United States. The great commercial and financial crisis there led to the repeal of the Silver Purchase Bill, after which the crisis abated, while trade remained stagnant owing to the enormous losses in the country and to the uncertainty about tariff reform. The European export trade to Australia, to the United States, and to the silver countries fell off considerably, and the British industries were in addition much affected by the great coal strike. Of other disturbing elements we may mention the banking failures and the financial embarrassment of the Government in Italy, the bankruptcy of Greece, the revolution in Brazil, the Russo-German tariff war, and the generally unsettled state of the European bourses. Had prices not been exceedingly low, they would no doubt have severely suffered, but depressed as they were, the index numbers for the past year do not throw much light on the state of affairs.

The monthly fluctuations of the average index numbers of all the forty-five descriptions of commodities were thus (1867-77 = 100):—

December, 1889	73·7	January, 1893	68·4	August, 1893....	67·1
" '90	71·1	February, "	69·0	September, "	68·2
" '91	71·4	March, "	68·1	October, "	68·6
September, 1892	66·8	April, "	67·4	November, "	67·8
October, "	67·4	May, "	67·4	December, "	67·0
November, "	68·2	June, "	67·4	January, 1894....	65·8
December, "	67·7	July, "	67·7	February, "	65·0

The index numbers from September to December were affected by the high prices of coals, but as these have since declined, and as many articles such as wheat, tin, copper, lead, and silk have continued their downward course, while coffee and jute are now also falling, the index numbers for January and February are considerably reduced, and are the lowest on record. Silver fell from $31\frac{3}{4}d.$ at the end of December, to $30\frac{1}{8}d.$ end of January, and $27\frac{3}{4}d.$ end of February, equal to index numbers 52·2, 50·6, and 45·6 respectively, the last price representing a ratio of 1 gold to 34 silver.

The quarterly movements of prices³ (see the Society's *Journal*, 1893, p. 221 and diagrams) have been as follows:—

³ The four quarterly figures of each year do not in all cases exactly (in the decimals) agree with the annual averages, as the latter are partly calculated from revised figures.

Summary of Index Numbers, 1867-77 = 100.

Years.	Quar- ters.	Vege- table Food (Corn, &c.).	Animal Food (Meat, &c.).	Sugar, Coffee, and Tea.	Total Food.	Mine- rals.	Tex- tiles.	Sundry Mate- rials.	Total Mate- rials.	Grand Total.	Silver.*
1889....	IV	66.3	86.0	67.2	73.1	83.9	70.7	68.1	73.2	73.2	71.4
'90....	IV	67.4	82.0	71.2	73.6	80.5	62.7	69.5	70.4	71.7	79.6
'91....	IV	77.2	80.8	68.7	76.7	73.9	58.6	69.0	67.1	71.2	72.1
'92	I	70.6	82.7	69.1	74.8	72.2	59.2	67.1	66.0	69.7	67.4
	II	67.5	83.1	66.6	73.0	73.4	57.0	65.8	65.2	68.5	65.8
	III	64.2	85.9	68.2	73.0	70.7	53.2	65.6	63.2	67.3	63.2
	IV	60.7	83.6	72.7	71.7	69.5	57.3	67.4	64.9	67.7	64.0
'93	I	59.0	84.3	75.2	71.8	67.0	59.8	70.3	66.2	68.5	63.0
	II	59.7	83.0	78.9	72.3	63.8	57.7	68.2	63.8	67.4	58.3
	III	58.9	86.1	74.0	72.1	67.4	57.7	67.7	64.5	67.7	55.1
	IV	58.6	83.2	70.5	70.2	72.3	58.7	67.2	66.0	67.8	52.2

* Silver 60.84*l.* per oz. = 100.

The figures illustrate the downward course of corn during the last two years, the rise of sugar in the second quarter last year, and the influence of coals on the index numbers of minerals in the last two quarters. Last year's figures show again the divergence of movements, noticed in my previous paper, between food and materials and between corn and animal food; in three cases out of four they have moved in opposite directions.

It was suggested when I read my paper last year, that unusual fluctuations or booms extending only to one or a few commodities should not be allowed to affect the general average, but this cannot be avoided, as it would necessitate a constant correction of many figures. Some may be raised owing to booms, others reduced owing to undue depression, and if such wilful corrections were made, the figures would soon be devoid of all trustworthiness. Besides, a boom in one or more articles may sometimes lead to a general improvement in other trades, or may by attracting more attention and capital to one set, make other branches proportionately neglected, while an extraordinary rise in such an article as coal may naturally have a depressing influence on many trades, and reduce other prices. It cannot be pretended that the index numbers show more than approximate movements, and they must necessarily be read with certain allowances, but we cannot do better than give the actual results, and point out the extraordinary influences.

The following figures show in each case the average index numbers of all the forty-five commodities of ten years (see the dotted line in the diagram of the *Journal*, 1886); they give the best picture of the gradual movement of the average prices of whole periods, as the ordinary fluctuations are still further obliterated:—

1818-27 = 111
'28-37 = 93
'38-47 = 93
'48-57 = 89
'58-67 = 99
'68-77 = 100

1874-83 = 90
'75-84 = 87
'76-85 = 85
'77-86 = 82
'78-87 = 79
'79-88 = 78

1880-89 = 76
'81-90 = 75
'82-91 = 74
'83-92 = 72
'84-93 = 71

The arithmetical mean of the forty-five index numbers, which is 68 for 1893, has, as in former years, again been subjected to two tests:—

Firstly, by using the same index numbers of the separate articles, but calculating each article according to its importance in the United Kingdom on the average of the three years 1889-91, when the mean for 1893 is 67·3 against 67·7 in 1892.

Secondly, by calculating the quantities in the United Kingdom at their actual values (the production on the basis of my price tables, the imports at Board of Trade values, and consequently a considerable portion according to a different set of prices) and at the nominal values on the basis of the average prices from 1867-77. In this case the mean for 1893 is 67·7 against 70·3 in 1892. The higher figure for 1892, and also for 1890 and 1891, was due to the high export price of coals, which article forms a very large item in the trade of the country.

The following table gives the figures which have served for the second test (see also the Society's *Journal*, 1886, pp. 613—19):—

Movements of Forty-five Commodities in the United Kingdom (Production and Imports).

	Estimated Actual Value in each Period.	Nominal Values at Average Prices of 1867-77, showing Increase in Quantities.	Movement of Quantities, 1848-50 = 100.	Movement of Quantities from Period to Period.	Ratio of Prices according to this Table, 1867-77 = 100.
	Mln. £'s and dec.	Mln. £'s and dec.			
Ave. 1848-50	219·8	294·8	100	—	74·6
„ '59-61	350·1	382·7	130	30% over 1849	91·5
„ '69-71	456·6	484·6	164	27% „ '60	94·2
„ '74-76	537·8	538·4	183	—	99·9
„ '79-81	489·7	578·5	196	19% over 1870	84·6
„ '84-86	445·7	610·1	207	—	73·0
„ '89-91	504·1	685·2	233	18% over 1880	73·6
1891.....	521·2	699·7	237	—	74·5
'92.....	482·9	686·5	233	—	70·3
'93*	444·0	655·9	223	—	67·7

* 1892 subject to correction after publication of the mineral produce returns.

The nominal values at the uniform prices of 1867-77 show the exact movement of quantities in the aggregate. The quantities during the three years 1889-91 were on the average 18 per cent. larger than in 1880, and 133 per cent. larger than in 1849. The production of coal in the United Kingdom in 1893 has been taken as 160 million tons, against 182 million tons in 1892, and if this should turn out to be correct, the decrease in the total quantities will amount to $4\frac{1}{2}$ per cent. as compared with the previous year, principally due to coals and cotton.

Correction.—In my last year's paper (see the Society's *Journal*, 1893, p. 271) I gave the production of gold for the years 1891 and 1892 without China, according to the publication of the then Director of the Mint in Washington, Mr. Leech. The new

Director of the Mint, Mr. Preston, has again included a certain amount for China, and the total production should stand as follows:—

		£
1890.	178,800 kilos. fine	Value 24,400,000
'91.	189,800 „	„ 25,900,000
'92.	208,900 „	„ 28,500,000

The figure for 1893 is not published yet, but I believe it will be over 217,000 kilos., or about 30 million £. The production of silver has probably somewhat decreased, but the effect of low prices will only be felt in the present year.

Construction of the Tables.

The Table of *Index Numbers* is based on the average prices of the eleven years 1867-77, and the index numbers have been calculated in the ordinary arithmetical way; for instance, English wheat:—

	s.	d.
Average, 1867-77....	54	6 = 100, average point.
„ '55	74	8 = 137, or 37 per cent. above the average point.
„ '93	26	4 = 48, „ 52 „ below „

The index numbers therefore represent simple percentages of the average point.

Certain articles which appear to have something in common have been grouped together, with the following result:—

		Example for 1893.	
		Total Numbers.	Average.
1. Vegetable food, corn, &c. (wheat, flour, barley, oats, maize, potatoes, and rice)	With 8 Index Nos.	469	59
2. Animal food (beef, mutton, pork, bacon, and butter)		592	85
3. Sugar, coffee, and tea		299	75
1—3. <i>Food</i>	„ 19 „	1,360	72
4. Minerals (iron, copper, tin, lead, and coals)	„ 7 „	479	68
5. Textiles (cotton, flax, hemp, jute, wool, and silk)		469	59
6. Sundry materials (hides, leather, tallow, oils, soda, nitrate, indigo, and timber)		753	68
4—6. <i>Materials</i>	„ 26 „	1,701	65
<i>General average</i>	„ 45 „	3,061	68

The *general average* is drawn from all 45 descriptions, which are treated as of equal value, and is the simple arithmetical mean as shown above.

Average Prices of Commodities.*

No. of Article }	0	1	2	3	4	5	6	7	8	1—8	9
		Wheat.		Flour.	Barley.	Oats.	Maize.	Potatoes.*	Rice.		Beef. †
Year.	Silver. ‡	English Gazette.	Ameri- can.	Town Made White.	English Gazette.	English Gazette.	Ameri- can Mixed.	Good English.	Rangoon Cargoes to Arrive.	Vegetable Food. Total.	Prime.
	d. per oz.	s. and d. per qr.	s. and d. per qr.	s. per sack (280 lbs.).	s. and d. per qr.	s. and d. per qr.	s. per qr.	s. per ton	s. and d. per cwt.		d. per 8 lbs.
1879.....	51 $\frac{1}{4}$	43.10	48	36	34	21.9	23 $\frac{3}{4}$	130	9.7	—	55
'80.....	52 $\frac{1}{4}$	44.4	51	39	33.1	23.1	25 $\frac{3}{4}$	130	9.1	—	58
'81.....	51 $\frac{1}{10}$	45.4	52	40	31.11	21.9	27 $\frac{3}{4}$	85	8.4	—	56
'82.....	51 $\frac{3}{8}$	45.1	48.6	40	31.2	21.10	31	95	7.5	—	60
'83.....	50 $\frac{9}{16}$	41.7	45	36	31.10	21.5	27 $\frac{3}{4}$	105	8.1	—	61
1884.....	50 $\frac{1}{16}$	35.8	36.6	31	30.8	20.3	25 $\frac{1}{4}$	75	7.8	—	58
'85.....	48 $\frac{3}{8}$	32.10	35	29	30.1	20.7	23	75	7	—	52
'86.....	45 $\frac{3}{8}$	31	35	28	26.7	19	21	80	6.7	—	49
'87.....	44 $\frac{3}{8}$	32.6	34	28	25.4	16.3	21 $\frac{1}{4}$	85	6.10	—	43
'88.....	42 $\frac{7}{8}$	31.10	37	30	27.10	16.9	23 $\frac{1}{2}$	80	7.1	—	48
1889.....	42 $\frac{1}{16}$	29.9	35	29	25.10	17.9	20	80	7.3	—	47
'90.....	47 $\frac{1}{16}$	31.11	35.6	29	28.8	18.7	20	70	7.3	—	47
'91.....	45 $\frac{1}{16}$	37	40	33.	28.2	20	28	92	7.11	—	47
'92.....	39 $\frac{1}{16}$	30.3	33	28	26.2	19.10	21 $\frac{3}{4}$	70	7.8	—	47
'93.....	35 $\frac{3}{8}$	26.4	27.6	26	25.7	18.9	20	65	6.2	—	48
Average											
1884-93	44 $\frac{1}{4}$	32	35	29	27 $\frac{1}{2}$	19	22 $\frac{1}{2}$	77	7	—	49
'78-87	50	40	43 $\frac{1}{2}$	34 $\frac{1}{2}$	31 $\frac{1}{2}$	21	25	102	8	—	55 $\frac{1}{2}$
'67-77	58 $\frac{1}{4}$	54 $\frac{1}{2}$	56	46	39	26	32 $\frac{1}{2}$	117	10	—	59
Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.											
1879.....	84.2	80	86	78	87	84	73	111	96	695	93
'80.....	85.9	81	91	85	85	89	79	111	91	712	98
'81.....	85	83	93	87	82	84	85	73	83	670	95
'82.....	84.9	83	87	87	80	84	95	81	74	671	102
'83.....	83.1	76	80	78	82	82	85	90	81	654	104
1884.....	83.3	65	65	65	79	78	78	64	77	571	98
'85.....	79.9	60	62	63	77	79	71	64	70	546	88
'86.....	74.6	57	62	61	68	73	65	69	66	521	83
'87.....	73.3	60	61	61	65	63	65	73	68	516	73
'88.....	70.4	58	66	65	71	64	72	69	71	536	81
1889.....	70.2	55	63	63	66	69	61	69	72	518	80
'90.....	78.4	59	63	63	73	72	61	60	72	523	80
'91.....	74.1	68	71	72	72	77	86	79	79	604	80
'92.....	65.4	56	59	61	67	76	67	60	77	523	80
'93.....	58.6	48	50	54	66	72	61	56	62	469	81

* The annual prices are the averages of twelve monthly or fifty-two weekly quotations; potatoes of eight monthly quotations, January to April and September to December.

† Index numbers of silver as compared with 60.84d. per ounce being the parity between gold and silver at 1 : 15 $\frac{1}{2}$; not included in the general average.

‡ Meat (9—13), by the carcase, in the London meat market.

Average Prices of Commodities—Contd.

No. of Article }	10	11	12	13	14	15	9-15	16A	16B	17	18A*	18B*
	Beef.	Mutton.		Pork.	Bacon.	Butter.		Sugar.			Coffee.	
Year.	Mid- dling.	Prime.	Mid- dling.	Large and Small. Average.	Water- ford.	Fries- land, Fine to Finest.	Animal Food. Total.	British West Indian Refining.	Beet, German, 88 p. c., f.o.b.	Java, Floating Cargoes.	Ceylon Plan- ta- tion, Low Mid- dling.	Rio, Good Channel.
	d. per 8 lbs.	d. per 8 lbs.	d. per 8 lbs.	d. per 8 lbs.	s. per cwt.	s. per cwt.		s. per cwt.	s. per cwt.	s. per cwt.	s. per cwt.	s. per cwt.
1879.....	45	64	52	48	72	107	—	19	21 $\frac{1}{4}$	24	90	58
'80.....	49	66	54	55	76	125	—	20 $\frac{1}{2}$	21 $\frac{1}{2}$	25 $\frac{1}{2}$	87	61
'81.....	48	69	57	54	76	123	—	21 $\frac{1}{4}$	22	26 $\frac{1}{2}$	80	49
'82.....	51	72	60	51	74	125	—	20	21 $\frac{1}{2}$	25 $\frac{1}{2}$	65	39
'83.....	51	73	61	49	72	123	—	19	20 $\frac{1}{4}$	24 $\frac{1}{2}$	76	43
1884.....	49	64	53	48	70	120	—	13 $\frac{1}{4}$	13 $\frac{1}{4}$	17 $\frac{1}{2}$	62	47
'85.....	44	56	47	45	68	111	—	13 $\frac{1}{2}$	14 $\frac{1}{4}$	17 $\frac{1}{2}$	60	39
'86.....	40	62	50	45	67	100	—	11 $\frac{3}{4}$	11 $\frac{1}{2}$	14 $\frac{1}{4}$	68	46
'87.....	36	52	42	43	61	103	—	11 $\frac{3}{4}$	12 $\frac{1}{2}$	14 $\frac{1}{2}$	90	78
'88.....	39	58	47	40	61	100	—	13	12 $\frac{3}{4}$	16	80	64
1889.....	39	63	50	43	66	102	—	16	16 $\frac{1}{2}$	19	95	76
'90.....	38	59	45	42	62	100	—	13	12 $\frac{1}{2}$	15 $\frac{1}{4}$	101	83
'91.....	40	53	42	39	63	106	—	13 $\frac{1}{2}$	13 $\frac{1}{2}$	15 $\frac{1}{2}$	101	76
'92.....	38	53	42	48	68	108	—	13 $\frac{1}{2}$	13 $\frac{3}{4}$	16	104	68
'93.....	39	53	42	50	68	106	—	14 $\frac{1}{4}$	15	17 $\frac{1}{4}$	103	81
Average												
1884-93	40	57	46	44	65 $\frac{1}{2}$	106	—	13 $\frac{1}{4}$	13 $\frac{3}{4}$	16 $\frac{1}{4}$	86	66
'78-87	46	64 $\frac{1}{2}$	53	49	71	116	—	17	18	21 $\frac{1}{2}$	78	52
'67-77	50	63	55	52	74	125	—	23	24	28 $\frac{1}{2}$	87	64

Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.

										*	*
1879.....	90	102	95	92	97	86	655	86	84	103	91
'80.....	98	105	98	106	103	100	708	89	89	100	95
'81.....	96	109	104	104	103	98	709	92	93	92	77
'82.....	102	114	109	98	100	100	725	87	89	75	61
'83.....	102	116	111	94	97	98	722	84	86	87	67
1884.....	98	102	96	92	95	96	677	56	62	91	74
'85.....	88	89	85	87	92	89	618	59	62	69	61
'86.....	80	98	91	87	91	80	610	50	50	78	72
'87.....	72	83	76	83	82	82	551	52	51	104	122
'88.....	78	92	85	77	82	80	575	57	56	92	100
1889.....	78	100	91	83	89	82	603	69	67	109	119
'90.....	76	94	82	81	84	80	577	54	54	116	130
'91.....	80	84	76	75	85	85	565	57	54	116	119
'92.....	76	84	76	92	92	86	586	58	56	120	106
'93.....	78	84	76	96	92	85	592	62	61	118	127

* Index numbers not included in the general average.

Average Prices of Commodities—Contd.

No. of Article }	18	19A*	19B*	19	16—19	1—19	20	21	22	—	23
	Coffee.	Tea.			Sugar, Coffee, and Tea.	Food. Total.	Iron.		Copper.		Tin.
Year.	Mean of 18A and 18B.	Congou, Common. d. per lb.	Average Import Price. d. and dec. per lb.	Mean of 19A and 19B.	Total.		Scotch Pig. s. and d. per ton	Bars, Common. £ per ton	Chili Bars. £ per ton	English Tough Cake. £ per ton	Straits. £ per ton
1879.....	Prices, see preceding page 18A and 18B.	9	14'68	—	—	—	47	5 $\frac{3}{4}$	58	64	73
'80.....		8 $\frac{3}{4}$	13'47	—	—	—	54'6	6 $\frac{3}{4}$	63	68	88
'81.....		6 $\frac{1}{2}$	12'82	—	—	—	49'1	5 $\frac{3}{4}$	62	67	93
'82.....		5	12'58	—	—	—	49'4	6 $\frac{1}{4}$	66	71	102
'83.....		5 $\frac{3}{4}$	12'46	—	—	—	46'9	5 $\frac{3}{4}$	63	67	93
1884.....		6 $\frac{1}{4}$	11'78	—	—	—	42'1	5 $\frac{1}{8}$	54	59	81
'85.....		6 $\frac{1}{2}$	12'06	—	—	—	41'10	4 $\frac{7}{8}$	43	47	87
'86.....		6 $\frac{1}{2}$	11'77	—	—	—	39'11	4 $\frac{5}{8}$	40	44	98
'87.....		5	10'58	—	—	—	42'3	4 $\frac{5}{8}$	44	47	112
'88.....		4	10'99	—	—	—	39'11	4 $\frac{7}{8}$	81	78	117
1889.....	Prices, see preceding page 18A and 18B.	4 $\frac{1}{4}$	10'79	—	—	—	47'9	6 $\frac{1}{4}$	51	54	93
'90.....		4 $\frac{1}{2}$	10'65	—	—	—	49'7	6 $\frac{3}{8}$	54	59	94
'91.....		5 $\frac{1}{2}$	10'70	—	—	—	47'2	5 $\frac{5}{8}$	51	55	91
'92.....		4 $\frac{7}{8}$	10'07	—	—	—	41'10	5 $\frac{1}{2}$	45	48	93
'93.....		5 $\frac{3}{8}$	9'81	—	—	—	42'4	5	44	47	85
Average 1884-93		5 $\frac{1}{4}$	11	—	—	—	43 $\frac{1}{2}$	5 $\frac{1}{4}$	51	54	95
'78-87		6 $\frac{3}{4}$	12 $\frac{3}{4}$	—	—	—	46	5 $\frac{1}{2}$	55	60	89
'67-77		11 $\frac{1}{4}$	17 $\frac{1}{4}$	—	—	—	69	8 $\frac{1}{4}$	75	81	105
Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.											
1879.....	97	80	85	82	349	1,699	69	70	77	—	69
'80.....	97	78	78	78	353	1,773	79	82	84	—	84
'81.....	84	58	75	66	335	1,714	71	70	83	—	89
'82.....	68	45	73	59	303	1,699	71	76	88	—	97
'83.....	77	49	72	60	307	1,683	69	70	84	—	89
1884.....	73	56	68	62	253	1,501	61	62	72	—	77
'85.....	65	58	70	64	250	1,414	60	59	57	—	83
'86.....	75	58	69	64	239	1,370	58	56	53	—	93
'87.....	113	44	62	53	269	1,336	61	56	59	—	107
'88.....	96	36	64	50	259	1,370	58	59	108	—	111
1889.....	114	38	63	50	300	1,421	69	76	68	—	89
'90.....	123	40	62	51	282	1,382	72	77	72	—	90
'91.....	118	49	62	56	285	1,454	68	68	68	—	87
'92.....	113	43	59	51	278	1,387	61	66	60	—	89
'93.....	123	48	57	53	299	1,360	61	61	59	—	81

* Index numbers not included in the general average.

Average Prices of Commodities—Contd.

No. of Article	24	25	26	20-26	27	28	29A	29B	30A	30B	31
	Lead.	Coals.			Cotton.		Flax.		Hemp.		Jute.
Year.	English Pig.	Wallsend Hetton in London.	Average Export Price.	Mine-rals. Total.	Middling Uplands.	Fair Dhollerah.	St. Peters-burg 12 Head Best.	Russian, Average Import.	Manilla Fair Roping.	St. Peters-burg Clean.	Good Medium.
	£ per ton	s. per ton	s. and dec. per ton		d. per lb.	d. per lb.	£ per ton	£ per ton	£ per ton	£ per ton	£ per ton
1879.....	15 $\frac{1}{8}$	18	8'77	—	6 $\frac{5}{16}$	5	34	35	27	25	16 $\frac{1}{2}$
'80.....	16 $\frac{1}{2}$	15 $\frac{1}{2}$	8'95	—	6 $\frac{1}{16}$	5 $\frac{1}{4}$	35	40	30	23	18 $\frac{3}{4}$
'81.....	15 $\frac{1}{8}$	17	8'97	—	6 $\frac{7}{16}$	4 $\frac{3}{8}$	32 $\frac{1}{2}$	33	43	24	18 $\frac{1}{2}$
'82.....	14 $\frac{1}{2}$	17	9'14	—	6 $\frac{8}{16}$	4 $\frac{5}{16}$	29 $\frac{1}{2}$	30 $\frac{1}{2}$	46	24	15
'83.....	12 $\frac{7}{8}$	18	9'35	—	5 $\frac{3}{4}$	3 $\frac{7}{8}$	30	30 $\frac{1}{2}$	46	26	14 $\frac{1}{4}$
1884.....	11 $\frac{1}{4}$	16 $\frac{1}{2}$	9'29	—	6	3 $\frac{1}{16}$	29 $\frac{1}{2}$	30 $\frac{3}{4}$	38	29	13 $\frac{1}{2}$
'85.....	11 $\frac{3}{8}$	16 $\frac{1}{2}$	8'95	—	5 $\frac{3}{8}$	4 $\frac{1}{4}$	34	35	35	29	12
'86.....	13 $\frac{1}{4}$	16	8'45	—	5 $\frac{1}{8}$	3 $\frac{9}{16}$	35	35	29	29	11 $\frac{1}{2}$
'87.....	12 $\frac{7}{8}$	16	8'32	—	5 $\frac{1}{2}$	3 $\frac{9}{16}$	32	31 $\frac{1}{2}$	34	29	12 $\frac{1}{4}$
'88.....	13 $\frac{7}{8}$	16 $\frac{1}{2}$	8'41	—	5 $\frac{9}{16}$	3 $\frac{3}{8}$	29	28	37	26	13 $\frac{1}{4}$
1889.....	13	17 $\frac{1}{2}$	10'21	—	5 $\frac{1}{16}$	4 $\frac{1}{8}$	28	28	50	26	15
'90.....	13 $\frac{1}{4}$	19	12'62	—	6	3 $\frac{1}{16}$	27	26	39	26	13 $\frac{1}{4}$
'91.....	12 $\frac{1}{2}$	19	12'16	—	4 $\frac{11}{16}$	3 $\frac{1}{4}$	28	26	32	24	13
'92.....	10 $\frac{5}{8}$	18 $\frac{1}{2}$	11'04	—	4 $\frac{1}{16}$	3	28	26	28	24	15
'93.....	9 $\frac{3}{4}$	19 $\frac{1}{2}$	9'98	—	4 $\frac{5}{8}$	3 $\frac{9}{16}$	34	31 $\frac{1}{2}$	26	24	13
Average											
1884-93	12 $\frac{1}{4}$	17 $\frac{1}{2}$	9 $\frac{7}{8}$	—	5 $\frac{3}{8}$	3 $\frac{3}{4}$	30 $\frac{1}{2}$	30	35	27	13 $\frac{1}{4}$
'78-87	14	16 $\frac{3}{4}$	9	—	6	4 $\frac{1}{4}$	33	34	35 $\frac{1}{2}$	26 $\frac{1}{2}$	15
'67-77	20 $\frac{1}{2}$	22	12 $\frac{1}{2}$	—	9	6 $\frac{3}{4}$	46	47 $\frac{1}{2}$	43	35	19

Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.

	74	82	70	511	70	74	73	67	87
1879.....	74	82	70	511	70	74	73	67	87
'80.....	80	70	72	551	77	78	79	68	99
'81.....	74	77	72	536	71	65	70	86	98
'82.....	71	77	73	553	74	64	64	90	79
'83.....	63	82	75	532	64	58	65	92	75
1884.....	55	75	74	476	67	59	64	86	71
'85.....	57	75	72	463	62	63	73	82	63
'86.....	65	73	68	466	57	53	75	74	61
'87.....	63	73	67	486	62	53	68	81	64
'88.....	68	75	67	546	62	58	61	81	70
1889.....	63	80	82	527	66	61	60	97	79
'90.....	65	86	101	563	67	58	56	82	70
'91.....	61	86	97	535	52	48	57	72	68
'92.....	52	84	88	500	46	45	57	67	79
'93.....	48	89	80	479	51	53	67	64	68

Average Prices of Commodities—Contd.

No. of Article }	32A	32B	33	34	27—34	35A	35B	36	37A	37B	38
	Wool.			Silk.	Textiles.	Hides.		Leather.	Tallow.		Oil.
Year.	Merino, Port Phillip, Average Fleeced.	Merino, Adelaide, Average Grease.	English, Lincoln Half Hogs.	Tsatlee.		River Plate, Dry.	River Plate, Salted.	Crop Hides, 30-45 lbs.	St. Petersburg, Y.C.	Town.	Palm.
	d. per lb.	d. per lb.	d. per lb.	s. per lb.	Total.	d. per lb.	d. per lb.	d. per lb.	s. per cwt.	s. per cwt.	£ per ton
1879.....	18 $\frac{3}{4}$	8 $\frac{1}{2}$	12 $\frac{1}{2}$	16	—	8	6 $\frac{3}{4}$	14 $\frac{1}{2}$	38	36	34
'80.....	21 $\frac{1}{2}$	10 $\frac{3}{8}$	15 $\frac{1}{8}$	15	—	9 $\frac{1}{4}$	7 $\frac{1}{2}$	15 $\frac{1}{2}$	41	36	32
'81.....	19 $\frac{1}{2}$	9 $\frac{1}{4}$	12 $\frac{3}{8}$	15 $\frac{3}{4}$	—	9	7	15 $\frac{1}{4}$	42	38	32
'82.....	19 $\frac{3}{4}$	9	11 $\frac{1}{4}$	15 $\frac{3}{4}$	—	9	7	15	52	44	35
'83.....	19	8 $\frac{1}{2}$	10	15 $\frac{3}{4}$	—	9	7	15	50	43	41
1884.....	18 $\frac{1}{4}$	8 $\frac{1}{8}$	10	14 $\frac{1}{2}$	—	9	7	15	47	37 $\frac{1}{2}$	36
'85.....	16 $\frac{1}{2}$	6 $\frac{3}{4}$	9 $\frac{7}{8}$	12 $\frac{3}{4}$	—	8 $\frac{3}{4}$	6 $\frac{1}{2}$	15	38	30 $\frac{1}{2}$	30
'86.....	15 $\frac{1}{2}$	6 $\frac{5}{8}$	10	13 $\frac{3}{4}$	—	8	5 $\frac{3}{4}$	15	31	26	24
'87.....	15 $\frac{3}{4}$	7	10 $\frac{5}{8}$	14 $\frac{1}{2}$	—	7 $\frac{3}{4}$	6 $\frac{1}{4}$	15	31	24	22
'88.....	15 $\frac{3}{4}$	7	10 $\frac{5}{8}$	13	—	6 $\frac{3}{4}$	4 $\frac{7}{8}$	14	36	28	22
1889.....	17 $\frac{1}{2}$	8 $\frac{1}{4}$	11	13 $\frac{1}{2}$	—	6 $\frac{1}{4}$	5	13 $\frac{1}{2}$	38	27	25
'90.....	16	7 $\frac{1}{2}$	11	14	—	5 $\frac{3}{4}$	5 $\frac{1}{2}$	13	38	26	27
'91.....	14 $\frac{3}{4}$	6 $\frac{7}{8}$	9 $\frac{3}{4}$	13	—	5 $\frac{1}{2}$	5 $\frac{5}{8}$	13	40	27 $\frac{1}{2}$	26
'92.....	13	6	8 $\frac{3}{4}$	12 $\frac{1}{4}$	—	5 $\frac{1}{2}$	4 $\frac{5}{8}$	13	45	27	24
'93.....	12 $\frac{3}{4}$	6	10 $\frac{1}{4}$	12 $\frac{1}{2}$	—	5 $\frac{1}{2}$	4 $\frac{7}{8}$	13	48	30 $\frac{1}{2}$	28
Average											
1884-93	15 $\frac{1}{2}$	7	10 $\frac{1}{8}$	13 $\frac{1}{2}$	—	6 $\frac{7}{8}$	5 $\frac{1}{2}$	14	39	28 $\frac{1}{2}$	26 $\frac{1}{2}$
'78-87	18 $\frac{1}{2}$	8 $\frac{3}{8}$	11 $\frac{3}{2}$	15	—	8 $\frac{3}{8}$	6 $\frac{3}{4}$	15	41	35 $\frac{1}{2}$	32 $\frac{1}{2}$
'67-77	21 $\frac{1}{4}$	9 $\frac{7}{8}$	19 $\frac{3}{4}$	23	—	9	7	16	45	45	39

Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.

1879.....	88	63	69	591	92	91	82	87
'80.....	103	77	65	646	105	97	86	82
'81.....	92	63	68	613	100	95	89	82
'82.....	92	57	68	588	100	94	107	90
'83.....	89	51	68	562	100	94	103	105
1884.....	85	51	63	546	100	94	94	92
'85.....	73	50	55	521	95	94	76	77
'86.....	70	51	60	501	85	94	63	61
'87.....	72	54	63	517	88	94	61	56
'88.....	72	53	57	514	73	87	71	56
1889.....	82	56	59	560	70	84	72	64
'90.....	76	56	61	526	70	81	71	69
'91.....	70	49	57	473	66	81	75	67
'92.....	61	44	53	452	63	81	80	61
'93.....	60	52	54	469	65	81	87	72

Average Prices of Commodities—Contd.

No. of Article }	39	40A	40B	41	42	43	44	45A	45B	35—45	20—45	1—45
	Oil.		Seeds.	Petro- leum.*	Soda.	Nitrate of Soda.	Indigo.	Timber.		Sundry Mate- rials. Total.	Mate- rials. Total.	Grand Total.
Year.	Olive.	Linseed.	Linseed.	Refined.	Crystals.		Bengal, Good Con- suming.	Hewn, Average Import.	Sawn or Split, Average Import.			
	£pertun	£pertun	s. per qr.	d. per gall.	s. per ton	s. per cwt.	s. per lb.	s. per load	s. per load			
'879.....	46	27	52	7 $\frac{3}{8}$	68	15	6 $\frac{1}{4}$	42	43	—	—	—
'80.....	41	27	54	7 $\frac{1}{2}$	74	15 $\frac{1}{2}$	7 $\frac{1}{4}$	49	52	—	—	—
'81.....	38	26	50	7 $\frac{1}{4}$	65	14 $\frac{1}{2}$	6 $\frac{3}{4}$	51	50	—	—	—
'82.....	37	23	44	6	63	13 $\frac{1}{4}$	6 $\frac{1}{2}$	52	52	—	—	—
'83.....	36	20	42	6 $\frac{1}{2}$	66	11 $\frac{1}{4}$	6 $\frac{1}{4}$	52	48	—	—	—
1884.....	40	20	43	6 $\frac{1}{2}$	65	9 $\frac{1}{2}$	6	48	46	—	—	—
'85.....	39	22	44	6 $\frac{7}{8}$	55	10 $\frac{1}{2}$	5 $\frac{1}{4}$	48	45	—	—	—
'86.....	38	20 $\frac{1}{2}$	42	5 $\frac{7}{8}$	49	10	5	43	43	—	—	—
'87.....	34	20 $\frac{1}{2}$	38	5 $\frac{3}{8}$	50	9 $\frac{1}{2}$	4 $\frac{3}{4}$	38	42	—	—	—
'88.....	36	18 $\frac{1}{2}$	39	6 $\frac{1}{2}$	48	10	4 $\frac{3}{4}$	41	44	—	—	—
1889.....	35	20	42	5 $\frac{3}{4}$	51	9 $\frac{1}{2}$	4 $\frac{1}{2}$	47	49	—	—	—
'90.....	41	23	43	5 $\frac{1}{2}$	61	8 $\frac{1}{2}$	4 $\frac{1}{4}$	44	46	—	—	—
'91.....	43	21	42	5 $\frac{3}{8}$	64	8 $\frac{3}{4}$	4 $\frac{3}{4}$	40	43	—	—	—
'92.....	36	18 $\frac{1}{2}$	39	5	66	8 $\frac{3}{4}$	4 $\frac{1}{2}$	40	44	—	—	—
'93.....	36	20 $\frac{1}{2}$	42	4	58	9 $\frac{1}{4}$	5 $\frac{1}{2}$	38	43	—	—	—
Average												
1884-93	38	20 $\frac{1}{2}$	41 $\frac{1}{2}$	5 $\frac{3}{4}$	57	9 $\frac{1}{2}$	4 $\frac{7}{8}$	42 $\frac{1}{2}$	44 $\frac{1}{2}$	—	—	—
'78-87	40	23	46	6 $\frac{7}{8}$	62	12 $\frac{1}{2}$	6	47	47	—	—	—
'67-77	50	30	60	12 $\frac{1}{2}$ *	92	14	7 $\frac{1}{4}$	60	54	—	—	—
Index Numbers (or Percentages) of Prices, the Average of 1867-77 being 100.												
'879.....	92	89		59	74	107	86	75	934	2,036	3,735	
'80.....	82	90		60	80	111	100	89	982	2,179	3,952	
'81.....	76	85		58	71	104	93	89	942	2,091	3,805	
'82.....	74	75		48	69	95	90	91	933	2,074	3,773	
'83.....	72	68		52	72	80	86	88	920	2,014	3,697	
1884.....	80	69		52	71	68	83	82	885	1,907	3,408	
'85.....	78	73		55	60	75	72	81	836	1,820	3,234	
'86.....	76	69		47	53	71	69	76	764	1,731	3,101	
'87.....	68	65		45	54	68	66	70	735	1,738	3,074	
'88.....	72	63		52	52	71	66	74	737	1,797	3,167	
1889.....	70	69		46	55	68	62	84	744	1,831	3,252	
'90.....	82	73		45	66	61	59	79	756	1,845	3,227	
'91.....	86	70		45	70	63	66	73	762	1,770	3,224	
'92.....	72	64		40	72	63	62	74	732	1,684	3,071	
'93.....	72	69		32	62	66	76	71	753	1,701	3,061	

* Petroleum as compared with the average from 1873-77 only.

V.—*Fires in London and the Metropolitan Fire Brigade in 1893.*

THE following particulars are taken from the Report of the Chief Officer, Mr. J. Sexton Simonds, to the Fire Brigade Committee of the London County Council, in continuation of similar notices for previous years:—

“The number of calls for fires, or supposed fires, received during the year has been 4,824. Of these 1,163 were false alarms, 251 proved to be only chimney alarms, and 3,410 were calls for fires, of which 180 resulted in serious damage, and 3,230 in slight damage.

“These figures only refer to calls which involved the turning out of firemen, fire engines, fire escapes, &c. They do not include ordinary calls for chimneys on fire, which are separately accounted for further on.

“The fires of 1893, compared with those of 1892, show an increase of 264; or compared with the average of the past ten years, an increase of 997.

“The following table gives the actual number of fires and percentages since the year 1866:—

Year.	Number of Fires.			Percentages.		
	Serious.	Slight.	Total.	Serious.	Slight.	Total.
1866.....	326	1,012	1,338	25	75	100
'67.....	245	1,152	1,397	18	82	100
'68.....	235	1,433	1,668	14	86	100
'69.....	199	1,373	1,572	13	87	100
'70.....	276	1,670	1,946	14	86	100
'71.....	207	1,635	1,842	11	89	100
'72.....	120	1,374	1,494	8	92	100
'73.....	166	1,382	1,548	11	89	100
'74.....	154	1,419	1,573	10	90	100
'75.....	163	1,366	1,529	11	89	100
'76.....	166	1,466	1,632	11	89	100
'77.....	159	1,374	1,533	10	90	100
'78.....	170	1,489	1,659	10	90	100
'79.....	159	1,559	1,718	9	91	100
'80.....	162	1,709	1,871	9	91	100
'81.....	167	1,824	1,991	8	92	100
'82.....	164	1,762	1,926	9	91	100
'83.....	184	1,960	2,144	9	91	100
'84.....	194	2,095	2,289	9	91	100
'85.....	160	2,110	2,270	7	93	100
'86.....	151	1,998	2,149	7	93	100
'87.....	175	2,188	2,363	7	93	100
'88.....	121	1,867	1,988	6	94	100
'89.....	153	2,185	2,338	7	93	100
'90.....	153	2,402	2,555	6	94	100
'91.....	193	2,699	2,892	7	93	100
'92.....	177	2,969	3,146	6	94	100
'93.....	180	3,230	3,410	5	95	100

Average for Ten Years.

1883-92	166	2,247	2,413	6.9	93.1	100
'93.....	180	3,230	3,410	5.3	94.7	100

“The number of fires in the metropolis in which life has been seriously endangered during the year 1893 has been 107; and the number of these in which life has been lost has been 45.

“The number of persons whose lives have been seriously endangered by fire is 160; of these 78 were saved, and 82 lost their lives. Of the 82 lost, 50 were taken out alive, but died afterwards in hospitals or elsewhere, and 32 were suffocated or burned to death. In addition to these cases, 193 persons are known to have been in more or less jeopardy at fires attended by the brigade during the year. The total number of persons whose lives have been endangered must not be compared with years prior to 1892, when cases in which persons had been slightly burned on face or hands, or had received cuts from glass, &c., were included.

* * * * *

“The number of calls for chimney fires has been 1,638. Of these 519 proved to be false alarms, and 1,119 were for chimneys on fire. In these cases there was no attendance of engines, but only of firemen with hand-pumps.

“The number of journeys made by the fire engines and hose vans of the brigade has been 35,764, and the total distance run has been 67,317 miles. These figures do not include hose carts and escapes, which are run by hand.

“The quantity of water used for extinguishing fires in the metropolis during the year has been nearly 32 million gallons, or about 141,500 tons. Of this quantity, considerably more than one-third was taken from the river, canals, and docks, and the remainder from the street pipes.

“During the year there have been 3 cases of late attendance of turncocks, and 1 case of short supply of water, making 4 cases in which the water arrangements were unsatisfactory.

“As long as the supply of water is intermittent in some parts of the metropolis, difficulties must occasionally arise, but each year the area under constant service is increasing, and the cases in which the water arrangements are unsatisfactory show a proportionate decrease.

“The services rendered at fires by the metropolitan police, the city police, and the salvage corps have, as heretofore, been invaluable.

“ The strength of the brigade is as follows :—

56 land fire engine stations.	1 stores van.
4 floating or river ”	5 waggons for street duties.
50 hose cart stations.	9 street stations.
3 ” and ladder truck stations.	133 watch boxes.
180 fire escape stations.	720 firemen, including chief officer,
9 steam fire engines on barges.	second officer, superintendents,
49 land steam fire engines.	and all ranks.
78 six-inch manual fire engines.	26 men under instruction.
17 under six-inch manual fire engines.	17 pilots.
1 hose tender and escape.	74 coachmen.
5 ” and ladder trucks.	135 horses.
104 ” carts and reels.	75 telephones between fire stations.
34 miles of hose.	56 alarm circuits round fire stations,
8 steam tugs.	with 563 call points.
13 barges.	21 telephones to police stations.
12 skiffs.	1 telegraph } to public and other
213 fire escapes.	75 telephones } buildings.
7 long fire ladders.	7 bell-ringing fire alarms to public
9 ladder vans.	and other buildings.
2 ” trucks.	1 speaking tube to public and other
2 trollies for engines.	buildings.
12 hose and coal vans.	

“ The number of firemen employed on the several watches kept up throughout the metropolis is at present 126 by day and 332 by night, making a total of 458 in every twenty-four hours; the average number of men available for general work at fires by night is 325.

“ The number of accidents to members of the brigade recorded during 1893 is 98. I am happy to be able to report that none of these have been fatal.

* * * * *

“ The total number of calls during the year, including those for actual fires, supposed fires, chimney fires, and supposed chimney fires, has been 6,462, or nearly 18 a day, all of which have been attended by firemen with suitable appliances.

“ Of the 1,163 false alarms received during the year, 606 have been malicious calls sent through the fire alarm call posts. In three cases the persons who gave the alarm were caught and punished. Seventeen persons were detected in the act of breaking the glass in the call points.

“ It is to be hoped that the number of these malicious alarms will be less when the power of magistrates to inflict fines up to 20*l.*, with imprisonment in default of payment, becomes more generally known. This power was given in August under the London County Council (General Powers) Act, 1893, 56 and 57 Vict.

“ The total number of attendances with engines at fires, or supposed fires, has been 13,304. This number includes the cases in which engines have been ordered to stand by without being sent on.

“ In addition to attending fires, the brigade has kept 166,000

watches of twelve hours each, has made 70,526 hydrant inspections, and 104,829 fire plug tablet inspections, has maintained all the machinery and appliances of the establishment in working order, written many thousand reports and letters, and carried on a variety of other work.

“Early in the year an important change was made in the system of providing against a breakdown in the direct telephonic communications between the headquarters and the superintendents’ stations. For this purpose there used to be loop lines and instruments connecting each district with those adjacent to it. This method necessitated the message being repeated four times, causing considerable delay and increasing the risk of errors being made. Duplicate direct wires between headquarters and each superintendent’s station, run on different routes to the original wires, have been substituted for the loop lines, and are found to be much more convenient.

“A signalling apparatus in connection with the telephone wires has been established throughout the A district, whereby considerable time is saved in getting help on to fires. The telephones at the Manchester Square station have at the same time been re-arranged. These changes will be extended to the other districts as soon as the necessary instruments can be supplied.

“The new station for Brompton, which has been built on the site of the old station, was opened on 26th June, and the additional station for Dulwich was opened and the duty commenced on the 31st July. For the duties at the latter station 11 firemen and 1 coachman have been added to the strength of the brigade. This is the first addition made to the number of stations since 1883.

“The number of men who have been taken on and trained during the year is 92.”

* * * * *

The following particulars are obtained from the tables appended to the report, viz.:—

The fires classified according to occupations, arranged in the order of frequency of occurrence; to which are added, for the purpose of comparison, the corresponding figures for the three previous years:—

Number.	Occupations.	Number of Fires.			
		1893.	1892.	1891.	1890.
1	Private houses	817	749	718	632
2	Lodgings	661	547	451	428
3	Victuallers	80	68	82	57
4	Commons, roads, and open spaces	77	—	—	—
5	Unoccupied.....	62	46	49	35
6	Tailors, clothiers, and outfitters	61	43	43	30
7	Boot and shoe makers	52	51	47	38
8	Greengrocers and fruiterers	45	38	45	27
9	Grocers	44	65	44	46

Number.	Occupations.	Number of Fires.			
		1893.	1892.	1891.	1890.
10	Under repair and building	44	44	33	37
11	Builders	44	41	34	26
12	Confectioners and pastrycooks.....	41	36	32	32
13	Stables	40	39	26	33
14	Coffee houses	35	44	28	26
15	Oil and colourmen	34	53	36	43
16	Bakers	33	34	34	35
17	Drapers	33	32	30	39
18	Engineers and machinists.....	33	14	34	24
19	Printers	32	30	36	27
20	Refreshment rooms	29	16	18	16
21	Offices	29	45	35	21
22	Tobacconists	28	20	29	25
23	Cabinet makers	27	24	32	21
24	Hairdressers	26	25	10	9
25	Furniture makers and dealers	25	24	21	18
26	Railways	24	26	16	17
27	Booksellers, binders, and stationers.....	24	19	24	16
28	Fried fish shops	21	19	10	11
29	Wardrobe dealers	21	8	13	8
30	Laundries	20	22	19	16
31	Fishmongers	20	19	10	13
32	Dairymen	19	17	19	13
33	Butchers	18	23	15	14
34	Public buildings (not theatres)	17	15	18	10
35	Provision merchants	17	15	10	5
36	Chemists	17	13	16	15
37	Farming stock	15	62	31	15
38	Carriers	15	11	10	6
39	Schools	15	10	11	11
40	Chandlers	14	26	31	15
41	Hotels (including club houses)	14	20	13	26
42	Contractors	14	11	4	16
43	Beershop keepers	13	24	8	11
44	Warehouses	13	17	26	12
45	China, glass, and earthenware dealers	13	8	11	7
46	Churches and chapels	12	8	7	9
47	Coopers	12	2	5	4
48	Upholsterers	12	11	9	11
49	Corn dealers	12	10	19	12
50	Hospitals	12	3	5	7
51	Mantle makers	12	8	12	10
52	Milliners and dressmakers	11	19	15	18
53	Hatters	11	12	11	9
54	Wholesale druggists	11	3	1	4
55	Saw mills	11	3	6	5
56	Timber merchants	11	8	10	4
57	Carpenters and workers in wood	10	11	17	7
58	Cheesemongers	10	9	14	5
59	Tinmen, braziers, and smiths	10	6	8	8
	Remainder	477	510	491	460
		3,410	3,146	2,892	2,555

Fires classified under the causes to which they have been assigned, and arranged in the order of frequency of occurrence:—

Causes.	Number of Fires.
1. Unknown and doubtful.....	993
2. Lamps (not gas) and lights thrown down	824
3. Gas in various ways	251
4. Candles	235
5. Sparks from fires, &c.	221
6. Defective or improperly set flues, hearths, stoves, &c.	200
7. Children playing with fire, matches, &c.	139
8. Hot ashes	103
9. Overheating of flues, ovens, furnaces, boilers, &c.....	83
10. Boiling over, or upsetting of fat, pitch, &c.	75
11. Airing linen and drying stoves	67
12. Overheating of portable gas stoves, &c.	33
13. Smoking tobacco	30
14. Foul flues, &c.	27
15. Lucifer matches.....	27
16. Vapour of spirit in contact with flame	15
17. Lime slaking by rain and otherwise	14
18. Mineral oil stoves, explosion, &c., of	12
19. Clothes coming in contact with fire	9
20. Spontaneous ignition.....	7
21. Fireworks	6
22. Burning rubbish	5
23. Fumigating	5
24. Overheating, fusion of electric wires	5
Miscellaneous, varying from 3 to 1.....	24
Total	<u>3,410</u>

VI.—*English Literature in 1893.*

THE following particulars are taken from the *Publishers' Circular* of the 6th January, 1894, in continuation of a series of similar extracts for previous years :—

“The table of the results of publishing activity during 1893 does not present much for remark. The total figure does not exceed the record of 1892 by so many as 150 books. Having regard to the general depression of trade, one would not have been surprised to find that fewer books were published last year than during its predecessor. In theology and education we find that 1893 gives us fewer books. Juvenile books show a great increase, which may be due in part to the fact that some are not improbably what we usually call works of fiction. From the titles it is often impossible to discern between the two. In novels a high rate of production is maintained. In political science, economy, &c., much fewer books are recorded. Voyages and travels have nearly the same figure as the previous year, while works of history and biography are slightly fewer. There is a

small increase in volumes of poetry, as also in year-books and serial volumes. Medical and surgical works are not so numerous. This remark applies also to belles-lettres."

Analytical Table of Books Published in 1893.

Subjects.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total of Books on each Subject for the Year.
Theology, sermons, biblical	* 32 † 8	32 10	37 10	47 9	37 8	30 3	31 2	10 —	39 5	45 6	58 11	61 2	459 74
Educational, classi- cal, and philo- logical	* 36 † 9	42 12	47 9	56 5	30 8	42 12	33 5	21 3	45 12	54 11	60 6	52 12	518 104
Juvenile works and tales	* 44 † 1	44 1	44 1	47 5	49 1	44 1	48 2	45 1	66 6	76 7	82 6	70 4	659 36
Novels, tales, and other fiction	* 24 † 16	31 21	33 23	64 29	73 33	54 26	56 35	43 24	108 43	212 83	117 40	120 20	935 393
Law, jurisprudence, &c.	* 2 † 4	4 1	2 3	4 3	2 3	1 2	— 1	— 2	4 1	2 —	5 —	1 3	27 23
Political and social economy, trade and commerce	* 11 † 3	8 2	4 2	12 3	6 1	8 —	2 —	2 —	4 —	2 1	6 1	6 1	71 14
Arts, science, and illustrated works }	* 12 † 2	7 1	1 1	10 3	7 1	7 4	3 4	2 5	6 4	10 1	5 4	16 7	86 37
Voyages, travels, and geographical research.....	* 14 † 2	9 4	9 6	16 5	12 7	24 5	24 10	15 3	27 8	25 13	36 8	36 1	247 72
History, biography, &c.	* 14 † 7	13 6	24 2	27 4	31 5	22 2	15 4	9 2	17 7	31 12	40 11	26 3	269 65
Poetry and the drama	* 8 † 3	9 3	14 4	22 3	18 2	23 6	12 2	2 —	14 2	21 4	18 4	36 4	197 37
Year - books and serials in volumes }	* 49 † 1	31 —	15 —	25 —	16 —	19 —	18 —	14 —	22 —	44 —	34 —	83 —	370 1
Medicine, surgery, &c.	* 3 † 1	6 5	3 6	3 4	8 7	1 2	10 5	3 3	11 2	17 9	13 8	15 6	93 58
Belles-lettres, essays, monographs, &c. }	* 3 † —	6 1	2 —	2 —	6 —	2 1	7 —	4 —	6 1	13 3	21 4	24 1	96 11
Miscellaneous, in- cluding pamphlets, not sermons.....	* 88 † 23	79 19	90 42	122 36	128 32	63 21	90 30	51 15	92 27	102 29	96 32	101 22	1,102 328
	420	407	434	566	531	425	449	279	579	833	726	733	1,463

* New books.

† New editions.

"The analytical table is divided into fourteen classes; also new books and new editions.

Divisions.	1892.		1893.	
	New Books.	New Editions.	New Books.	New Editions.
Theology, sermons, biblical, &c.....	528	145	459	74
Educational, classical, and philological...	579	115	518	104
Juvenile works and tales.....	292	53	659	36
Novels, tales, and other fiction	1,147	390	935	393
Law, jurisprudence, &c.	36	29	27	23
Political and social economy, trade and } commerce	151	24	71	14
Arts, sciences, and illustrated works.....	147	62	86	37
Voyages, travels, geographical research ..	250	86	247	72
History, biography, &c.	293	75	269	65
Poetry and the drama.....	185	42	197	37
Year-books and serials in volumes	360	13	370	1
Medicine, surgery, &c.	127	50	93	58
Belles-lettres, essays, monographs, &c.	107	32	96	11
Miscellaneous, including pamphlets, } not sermons	713	223	1,102	328
	4,915	1,339	5,129	1,253
	6,254		6,382	

Newspaper Statistics.—The following is from the *Publishers' Circular* of 24th February, 1894:—

"From the *Newspaper Press Directory* for 1894 we ascertain that there are now published in the United Kingdom 2,291 newspapers, distributed as follows:—

England—

London	449
Provinces	1,332—1,781
Wales	101
Scotland	220
Ireland.....	166
Isles	23

"Of these there are—

152 daily papers published in England	
7 " "	Wales
21 " "	Scotland
17 " "	Ireland
2 " "	British Isles

On reference to the first edition of this useful directory for the year 1846 we find the following interesting facts, viz., that in that year there were published in the United Kingdom 551 journals. Of these 14 were issued daily, viz., 12 in England and 2 in Ireland; but in 1894 there are now established and circulated 2,291 papers, of which no less than 199 are issued daily, showing

that the press of the country has more than quadrupled during the last forty-eight years. The increase in daily papers has been still more remarkable, the daily issues standing 199 against 14 in 1846. We further learn that there are now published in the United Kingdom 2,061 magazines, of which more than 471 are of a decidedly religious character. Comparing 1894 with 1860 (the first year that any complete list of magazines was published) we find that in that year there were only 405 of such publications in existence, 162 of which were religious magazines. Almost every branch of science and thought is represented, and it is curious to note that already the latest cult, Theosophy, has no less than 5 publications devoted to its advocacy."

VII.—Statistical and Economical Articles in Recent Periodicals.

UNITED KINGDOM—

Economic Journal. Vol. iii, No. 12. December, 1893—

The Agricultural Problem (Part 2): *W. E. Bear.*

Some controverted points in the Administration of Poor Relief (Part 2): *C. S. Loch.*

The Industrial Residuum: *Helen Dendy.*

Some objections to Bimetallism viewed in connection with the report of the Indian Currency Committee: *L. L. Price.*

India and the Report of the Committee on Currency: *W. Fowler.*

Competition as it affects Banking: *F. E. Steele.*

The Coal Dispute of 1893; its History, Policy, and Warnings: *C. M. Percy.*

The Lock-out in the Coal Trade: *Clem. Edwards.*

Economic Review. Vol. iv, No. 1. January, 1894—

Economists as Mischief-makers: *Rev. W. Cunningham.*

The Stress of Competition from the Workman's Point of View: *R. Halstead.*

Working Men's Clubs: *J. Wells.*

The Coal War:—

1. Cannock Chase: *Rev. R. M. Grier.*

2. Lancashire: *J. Chadburn.*

European Militarism and an Alternative: *C. Roberts.*

UNITED STATES—

Annals of the American Academy of Political and Social Science. Vol. iv, No. 4. January, 1894—

Indian Currency: *G. L. Molesworth.*

Adaption of Society to its environment: *W. D. Lewis.*

Federal Revenues and the Income Tax: *F. C. Howe.*

La Science Sociale: *P. de Rousiers.*

Political Science Quarterly. Vol. viii, No. 4. December, 1893—

The Concentration of Wealth: *G. K. Holmes.*

The Economic State: *Prof. L. M. Keasbey.*

Villanage in England: *I. S. Leadam.*

Parliamentary Government in Italy: *The Marquis Pareto.*

UNITED STATES—*Contd.*

Quarterly Journal of Economics. Vol. viii, No. 2. January, 1894—
Analysis of the Phenomena of the Panic in the United States
in 1893: *A. C. Stevens.*

The Nature and Mechanism of Credit: *S. Sherwood.*

The Unemployed in American Cities: *C. C. Closson, jun.*

Pain-cost and Opportunity-cost: *D. I. Green.*

Yale Review. Vol. ii, No. 4. February, 1894—

The Ecclesiastical Treatment of Usury: *H. C. Lea.*

European Bureaus of Labor Statistics: *E. R. L. Gould.*

Jefferson and the Social Compact Theory: *G. P. Fisher.*

English Labour in and out of Parliament: *E. Porritt.*

FRANCE—

Annales de l'Ecole Libre des Sciences Politiques. No. 1. January,
1894—

Le tarif des douanes françaises de 1892, le tarif des douanes
allemandes et les négociations commerciales: *C. Dupuis.*

Journal des Economistes—

December, 1893—

Arnold Toynbee et le mouvement économique en Angleterre:
E. Castelot.

Un premier essai de Socialisme d'Etat sous Napoléon III; La
caisse générale des assurances agricoles: *A. Thomereau.*

Les officiers ministériels: *L. Theureau.*

January, 1894—

Le marché financier en 1893: *A. Raffalovich.*

Crédit populaire industriel ou agricole: *M. de Malarce.*
(Concluded in the next number.)

Trente années de Libre-Echange en Angleterre: *G. François.*

February—

Les chemins de fer de l'Etat en France et à l'Etranger:
E. Ratin.

Journal de la Société de Statistique de Paris—

December, 1893—

L'impôt du timbre devant la statistique: *L. Salefranque.*

January, 1894—

Le département du travail et les bureaux de statistique du
travail aux Etats-Unis: *E. Levasseur.*

Les Anomalies dans les statistiques du commerce extérieur:
M. de Cassano.

February—

Les Sociétés de secours mutuels: *MM. A. Vannacque et
Hercouet.*

Les Origines de la Société de Statistique de Paris:
A. de Malarce.

La Réforme Sociale—

No. 72. 16th December, 1893—

La Question des Octrois: *E. Cohen.*

L'Industrie lainière de Verviers.—Les effets de la régle-
mentation du travail.—Le Patronage.—Les Grèves de
1893: *P.*

FRANCE—Contd.

La Réforme Sociale—Contd.

No. 73. 1st January, 1894—

L'Histoire et le Bilan de la Grève du Pas-de-Calais :

A. Maron. (Continued in No. 75.)

L'Industrie du Chiffon à Paris et la vie des Chiffonniers :

E. Fuster. (Continued in the next number.)

No. 74. 16th January—

Qu'est-ce que la Liberté politique : A. Desjardins.

Deux types d'Ecoles ménagères : J. Nazarkiewicz.

No. 75. 1st February—

L'Assistance sociale en France et les Sociétés de secours mutuels : E. Fournier de Flaix.

No. 77. 1st March—

L'Assurance obligatoire allemande et l'Assurance libre :

A. Gigot.

L'Economie rurale de la France sous Henri IV (1589-1610) :

G. Fagniez.

Revue d'Economie Politique—

December, 1893—

Les principales causes des crises économiques : A. A. Issaïew.

Le Crédit agricole : M. François.

Histoire économique de la prospérité et de la décadence de l'Espagne au xvi^e et au xvii^e siècles : M. Ansiaux.

January, 1894—

L'Evolution économique dans l'Histoire : C. Favre, d'après K. Bücher.

De la tendance au Monopole dans le mouvement économique actuel : C. Bodin.

Le conflit de la souveraineté fédérale et de la souveraineté locale aux Etats-Unis d'Amérique : L. Duquitt.

GERMANY—

Archiv für Soziale Gesetzgebung und Statistik—

Band vi, Heft 3 und 4, 1893—

Die Entwicklung der Arbeiterschutzgesetzgebung in der Schweiz : Dr. F. Schuler.

Die Forderungen der Kriminalpolitik und der Vorentwurf eines schweizerischen Strafgesetzbuches : F. von Liszt.

Umlegung und Zonenenteignung als Mittel rationeller Städteerweiterung : F. Adickes.

Die österreichische Gewerbeinspektion mit besonderer Rücksicht auf den Bericht vom Jahre 1892 : Dr. E. Mischler.

Zur Lage der deutschen Sozialdemokratie : Dr. H. Braun.

Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft im Deutschen Reich. (Schmoller.) 1894. Heft i—

Le Play : A. von Wenckstern.

Güterzertrümmerung und Abnahme der Höfe in Oberbayern : R. Schreiber.

GERMANY—Contd.

Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft im Deutschen Reich. (Schmoller.) 1894. Heft i—Contd.

Die Frage der ländlichen Arbeiter und der inneren Kolonisation auf der Generalversammlung des Vereins für Socialpolitik in Berlin am 20 und 21 März, 1893: *K. Rathgen.*

Die Organisation des Handwerks nach den Vorschlägen des preussischen Handelsministers: *R. Stegemann.*

Das neue badische Gewerbekammergesetz vom 22 Juni, 1892: *T. Hampke.*

Die Innungsentwicklung in Preussen, eine statistische Studie: *T. Hampke.*

Die Zöblitzer Serpentinsteindustrie, eine frühere Hausindustrie: *L. T. Hisserich.*

Jahrbücher für Nationalökonomie und Statistik. Dritte Folge—
Band vi, Heft 6, 1893—

Das Rentenprinzip im Dienste des Anerbenguts: *Dr. Baron.*
Zur Agrarfrage: *F. H. Geffcken.*

Der hessische Landesgewerbeverein und die Grossherzogliche Zentralstelle für die Gewerbe: *T. Hampke.*

Die ortsüblichen Tagelöhne gewöhnlicher Tagearbeiter: *E. Hirschberg.*

Die Erträgnisse der sog. "Börsensteuer": *A. Eschenbach.*

Band vii, Heft 1—

Die Syndikatsbestrebungen im niederrheinisch-westfälischen Steinkohlenbezirke: *F. Sarter.*

Die zweite Lesung des Entwurfes eines Bürgerlichen Gesetzbuches für das Deutsche Reich: *A. Greiff.* (Continued in next number.)

Die Organisation des Handwerks und die Regelung des Lehrlingswesens: *T. Hampke.*

Die Sparkasseneinlagen in einigen europäischen Staaten.

Band vii, Heft 2—

Der deutsche Getreidehandel: *K. Wiedenfeld.*

Gesetz über die Abänderung des Gesetzes, betreffend die Krankenversicherung der Arbeiter, vom 15 Juni, 1883.
Vom 10 April, 1892.

Die Altersversicherung für Arbeiter in Frankreich: *A. Liesse.*

Der deutsche Aussenhandel seit 1885: *M. Diezmann.*

Die Preise des Jahres 1893 in Deutschland und der Einfluss des Zolles auf die Getreidepreise: *J. Conrad.*

Vierteljahrschrift für Volkswirtschaft, Politik, &c.—

Band iv, Hälfte 2, 1893—

Zur Geschichte der deutschen Gesellenverbände: *C. Meyer.*

Der Individualismus: *M. Block.*

Vierteljahrshefte zur Statistik des Deutschen Reichs. Heft 1, 1894—

Grosshandels-Preise wichtiger Waaren an deutschen Plätzen im Jahre 1893 und in den 15 Jahren 1879 bis 1893.

Der Bestand der deutschen Fluss-, Kanal-, Haff-, und Küstenschiffe am Schluss der Jahre 1877, 1882, 1887, und 1892.

GERMANY—*Contd.*

Vierteljahrshefte zur Statistik des Deutschen Reichs. Heft 1—Contd.

Der Verkehr auf den deutschen Wasserstrassen in den Jahren 1872 bis 1892.

Die deutsche Seeschifffahrt in den Jahren 1883 bis 1892.

Der Taback im deutschen Zollgebiet. Besteuerung des Tabacks, Ein- und Ausfuhr von Taback und Taback-Fabrikaten, sowie Ertrag der Taback-Abgaben im Erntejahre 1892/93.

Zeitschrift für die gesamte Staatswissenschaft. (Jubilæumsband.) Heft 2, 1894—

Die diokletianische Taxordnung vom Jahre 301: *K. Bücher.*
Untersuchung über die Grundlagen des Tarifwesens der Seeschifffahrt: *Freiherr von Weichs.*

Das englische Volkserziehungswesen: *A. Winter.*

Volkvertretungsprobleme aus Anlass der österreichischen Wahlreform: *Dr. A. Schäffle.*

Zeitschrift für Litteratur und Geschichte der Staatswissenschaften Band ii, Heft 3 und 4, 1894—

Die Statistik in Italien: *Dr. F. Virgilii.*

AUSTRIA—

Statistische Monatschrift—

November—December, 1893—

Die Berufsverhältnisse der Bevölkerung Wiens: *Dr. H. Rauchberg.*

ITALY—

Giornale degli Economisti—

January, 1894—

La questione delle otto ore di lavoro: *L. Albertini. (Contd.)*

Della libertà secondo il Ferrara: *G. Pinna Ferrà.*

February—

I viglietti di scorta delle banche di emissione: *G. B. Salvioni.*

Teoria matematica dei cambi forestieri: *V. Pareto.*

VIII.—*Additions to the Library.*

Additions to the Library during the Quarter ended 15th March, 1894, arranged alphabetically under the following heads:—(a) Foreign Countries; (b) India and Colonial Possessions; (c) United Kingdom and its Divisions; (d) Authors, &c.; (e) Societies, &c. (British); (f) Periodicals, &c. (British).

Donations.	By whom Presented (when not purchased).
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(a) Foreign Countries.

Argentine Republic—

Censo de los Empleados administrativos, Funcionarios judiciales y Personal Docente de la Republica correspondiente al 31 Dec., 1892. 8vo.....	} The Director-General of Statistics

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(a) Foreign Countries—Contd.	
Argentine Republic—Contd.	
Higiene Publica. Anales de. (Current monthly numbers)	Dr. E. R. Coni John B. Martin, Esq., M.A. The Municipal Sta- tistical Bureau
Mortalidad habida en 18 Ciudades argentinas durante 1889. La. 8vo.	
BUENOS AYRES (CITY). Bulletin mensuel de Statis- tique municipale. (Current numbers)	
Instituto Geografico Argentino. Boletin del, Tomo xiv, Cuadernos 5—8. Maps, 8vo., 1893.....	The Institute
Austria-Hungary—	
Ackerbau-Ministeriums. Statistisches Jahrbuch des K.K., für 1892. Heft 2. Der Bergwerksbetrieb Österreichs im Jahre 1892. Lief. 2. 8vo.....	The Ministry of Agri- culture
Ernteeergebniss der wichtigsten Körnerfrüchte im Jahre 1893. 12 pp., diagrams. 8vo. 1894.....	
Handel. Statistische Übersichten betreffend den auswärtigen, des österreichisch-ungarischen Zollge- biets im Jahre 1893. (Also current monthly returns for 1894.) 8vo.	The Statistical De- partment, Ministry of Commerce
Statistische Monatschrift. (Current numbers)	
PRAGUE. Bulletins hebdomadaires et trimestriel de la ville de Prague et des communes-faubourgs. (Cur- rent numbers)	The Central Statisti- cal Commission
	The Municipal Sta- tistical Bureau
Belgium—	
Armée Belge. Statistique médicale. Année 1892. La. 8vo.....	The Belgian Govern- ment
Mouvement Commercial avec les Pays Etrangers. (Current monthly numbers)	
BRUSSELS. Bulletins hebdomadaires et trimestriel de statistique démographique et médicale. (Current numbers)	Dr. E. Janssens
BRUGES. Verslag over het Bestuur en den Toestand van Stadszaken voor het Jaar 1892. 8vo.	
HASSELT. Exposé de la situation administrative de la ville de Hasselt, exercice 1892-93. 8vo.....	"
Bulgaria. Commerce de la Principauté avec les Pays Etrangers pendant 1892. La. 8vo.	T. J. Pittar, Esq.
China. Customs Gazette. No. 99, July—Sept., 1893	Sir Robert Hart, Bart., G.C.M.G.
Colombia. Boletin trimestral de la Estadistica nacional de Colombia. No. 3. 1893. La. 8vo.	T. J. Pittar, Esq.
Denmark. Causes des décès dans les villes du royaume pendant 1891. 4to.	The Statistical Bu- reau
Egypt—	
Budget du Gouvernement Egyptien pour l'exercice 1894. Fol.....	Sir E. Mitford Pal- mer, K.C.M.G.
Compte Général du Gouvernement Egyptien pour l'exercice 1893. Fol.....	

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(a) Foreign Countries—Contd.	
Egypt—Contd.	
Services Sanitaires, &c. Bulletin hebdomadaire de l'Administration des. (Current numbers).....	The Health Department
Comité de Conservation des Monuments de l'art arabe. Exercice 1892. Fasc. 9. Procès-verbaux des Séances, &c. Plates, 8vo.	
Institut Egyptien. Bulletin. (Current numbers.) 8vo. 1893	The Institute
France—	
Agriculture. Bulletin du Ministère de l'. No. 6, statistique agricole annuelle, 1892	The Ministry of Agriculture
Chemins de Fer Français. Statistique des, au 31 Décembre, 1892. Documents principaux. Maps, 4to.....	
Commerce de la France. Documents Statistiques [mensuels]. (Current numbers)	Purchased
Finances, Ministère des. Bulletin de Statistique et de Législation comparée. (Current monthly numbers)	The Ministry of Finance
Justice civile et commerciale en France et en Algérie. Compte général de l'administration pendant 1890.	
Justice criminelle en France et en Algérie. Compte général de l'administration pendant 1890. 4to.	The Ministry of Justice
Minérale, Industrie, et Appareils à vapeur en France et en Algérie. Statistique pour 1892, avec un Appendice concernant la statistique minérale internationale. Diagrams and map, 4to.	
Travaux Publics, Ministère des. Bulletin de Statistique et Législation comparée. (Current monthly numbers)	The Ministry of Public Works
Travail. Office du—	
Bulletin [mensuel]. (Current numbers.) 8vo.	The Department
Notices et Comptes Rendus. Fasc. 6. Résultats statistiques de l'assurance obligatoire contre la maladie in Autriche, 1893. Fasc. 7. Statistique des Grèves survenues en France pendant 1892.	
Salaires et durée du Travail dans l'Industrie Française. Tome i. Département de la Seine. 8vo. 1893	
PARIS. Annuaire Statistique de la Ville de Paris, 1887-90. 4 vols.	
L'Economiste Français. (Current weekly numbers)	The Editor
Journal des Economistes. (Current monthly numbers)	
Le Monde Economique. (Current weekly numbers)	"
Polybiblion. Revue Bibliographique Universelle. Parties Littéraire et Technique. (Current monthly numbers)	
La Réforme Sociale. (Current numbers)	"
Le Rentier. Journal Financier Politique. (Current numbers)	
Revue d'Economie Politique. (Current monthly numbers)	"

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(a) Foreign Countries—Contd.	
France—Contd.	
Revue Géographique Internationale. (Current monthly numbers)	The Editor The Institution The Society
Ecole Libre des Sciences Politiques, Annales. No. 1. 1894	
Société de Statistique de Paris, Journal. (Current monthly numbers)	
Germany—	
Handel des deutschen Zollgebiets. Monatliche Nachweise über den Auswärtigen. (Current monthly returns)	The Imperial Statistical Bureau
Handel, Auswärtiger, des deutschen Zollgebiets im Jahre 1892. Theil 2. Darstellung nach Herkunfts- und Bestimmungs-Ländern. 4to.	
Binnen-Schiffahrt. Statistik der, für 1892, sowie der Bestand der deutschen Fluss-, Kanal-, Haff-, und Küstenschiffe am 31 Dec., 1892. 4to.	
Seeschiffahrt. Statistik der, für 1892. Abth. 2. Seeverkehr in den deutschen Hafenplätzen. Seereisen deutscher Schiffe. 4to.....	
Vierteljahrshefte zur Statistik des Deutschen Reichs. 1894. Heft 1. 4to.	
Volkszählung, Die, am 1 Dec., 1890, im Deutschen Reich. Tabellen mit Erläuterungen und graphischen Darstellungen. 4to.	Sir Rawson W. Rawson, K.C.M.G., C.B.
BAVARIA. Viehzählung. Ergebnisse der, 1 Dec., 1892, [und] Ergebniss der Erhebung über die Zertrümmerung bäuerlicher Anwesen in Bayern während 1888-90. Maps and diagrams, 8vo.....	
SAXONY. Kalender und Statistisches Jahrbuch für 1894. 8vo.	The Statistical Bureau of Saxony
Berlin—	
Eheschliessungen, Geburten, Sterbefälle, und Witterung. (Current weekly and monthly numbers)	The Statistical Bureau of Berlin
Tabellen über die Bewegung der Bevölkerung der Stadt Berlin im Jahre 1892. 4to.	
Allgemeines Statistisches Archiv. Jahrgang III. Halbband 1. Map, 8vo. 1893	Dr. Georg von Mayr
Archiv für Soziale Gesetzgebung und Statistik. Band vi, Hefte 3 und 4, 1893	
Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft im Deutschen Reich. Jahrgang xviii, Heft 1, 1894	The Editor
Jahrbücher für Nationalökonomie und Statistik. (Current numbers)	The Publisher
Zeitschrift für die gesamte Staatswissenschaft. Fünfzigster Jahrgang. (Jubilæumsband) Heft 2. 1894	The Editor
Zeitschrift für Litteratur und Geschichte der Staatswissenschaften. Band ii, Hefte 3—5. 1893-94.....	
Vierteljahrschrift für Volkswirtschaft, Politik und Kulturgeschichte. Band iv, Hälfte 2. 1893.....	Purchased
Italy—	
Annali di Agricoltura, 1893. No. 201. Atti della Commissione consultiva per la Fillossera. Map	The Director-General of Statistics

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(a) Foreign Countries—Contd.	
Italy—Contd.	
Annali di Statistica. Statistica Industriale. Fasc. 47, Provincia di Massa e Carrara. 1893	The Director-Gen- eral of Statistics
Bollettino di Legislazione e Statistica Doganale e Com- merciale. (Current numbers)	
Bollettino del Ministero degli Affari Esteri. (Current numbers)	
Bollettino mensile delle situazioni dei Conti degli Istituti d' Emissione. (Current numbers)	
Bollettino di Notizie sul Credito e la Previdenza. (Current numbers)	
Bollettino settimanale dei Prezzi di alcuni dei prin- cipali Prodotti Agraria e del Pane. (Current weekly numbers)	
Bollettino Sanitario, Direzione della Sanita Pubblica. (Current numbers)	
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Transactions. Parts 1 and 2 of vol. xxxvii. Sessions 1891-92 and 1892-93. Plates, 4to.		
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(f) Periodicals, &c. (British).*		
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Athenæum, The	"	"
Bankers' Magazine, The	"	"
British Trade Journal, The	"	"
Building Societies and Land Companies' Gazette, The	"	"
Colliery Guardian	"	"
Commercial World, The	"	"
Economist, The	"	"
Finance Chronicle, The	"	"
Fireman, The	"	"
Insurance Post, The	"	"
„ Record, The	"	"
Invention	"	"
Investors' Monthly Manual, The	"	"
Iron and Coal Trades' Review, The	"	"
Iron and Steel and Coal Times	"	"

* Foreign and Colonial Periodicals will be found under the various Countries or Colonies in which they are issued.

IX.—PERIODICAL RETURNS.

REGISTRATION OF THE UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES—To 30TH SEPTEMBER, 1893.

BIRTHS AND DEATHS—To 31ST DECEMBER, 1893.

A.—*Serial Table of MARRIAGES, BIRTHS, and DEATHS, returned in the Years 1893-87, and in the QUARTERS of those Years.*

Calendar YEARS, 1893-87:—Numbers.

Years	'93.	'92.	'91.	'90.	'89.	'88.	'87.
Marriages No.	—	226,922	226,526	223,028	213,865	203,821	200,518
Births..... „	914,305	897,270	914,157	869,937	885,944	879,868	886,331
Deaths „	569,997	559,090	587,925	562,248	518,353	510,971	530,758

QUARTERS of each Calendar Year, 1893-87.

(I.) MARRIAGES:—*Numbers.*

<i>Qrs. ended last day of</i>	'93.	'92.	'91.	'90.	'89.	'88.	'87.
March..... No.	40,193	42,788	49,203	40,905	41,006	40,276	38,836
June „	58,807	59,864	52,678	59,180	55,741	51,684	52,637
September „	58,342	58,235	58,651	57,143	53,820	51,603	49,746
December „	—	66,035	65,994	65,800	63,298	60,258	59,299

(II.) BIRTHS:—*Numbers.*

<i>Qrs. ended last day of</i>	'93.	'92.	'91.	'90.	'89.	'88.	'87.
March..... No.	231,412	219,851	229,133	225,640	220,296	223,766	219,162
June „	235,109	232,385	239,480	220,060	227,641	224,112	226,338
September „	229,147	228,254	224,580	220,769	220,341	214,651	222,835
December „	218,637	216,780	220,964	203,468	217,666	217,339	217,996

(III.) DEATHS:—*Numbers.*

<i>Qrs. ended last day of</i>	'93.	'92.	'91.	'90.	'89.	'88.	'87.
March..... No.	144,700	182,482	157,987	165,318	139,344	149,976	143,123
June „	132,860	131,991	171,842	128,625	124,434	124,918	128,488
September „	143,380	115,733	116,690	122,515	122,362	107,881	125,232
December „	149,057	128,884	141,406	145,790	132,213	128,196	133,915

*Annual Rates of MARRIAGES, BIRTHS, and DEATHS, per 1,000 PERSONS
LIVING in the Years 1893-87, and in the QUARTERS of those Years.*

Calendar YEARS, 1893-87:—General Ratios.

YEARS.....	'93.	Mean '83-92.	'92.	'91.	'90.	'89.	'88.	'87.
Estmtd. Popln. of England in thousands in middle of each Year....	29,731,	—	29,405,	29,083,	28,764,	28,448,	28,136,	27,828,
Persons Mar- ried	—	15'0	15'4	15'6	15'5	15'0	14'4	14'4
Births	30'8	31'9	30'5	31'4	30'2	31'1	31'2	31'9
Deaths.....	19'2	19'2	19'0	20'2	19'5	18'2	18'1	19'1

QUARTERS of each Calendar Year, 1893-87.

(I.) PERSONS MARRIED:—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'93.	Mean '83-92.	'92.	'91.	'90.	'89.	'88.	'87.
March	10'9	12'1	11'7	13'7	11'5	11'7	11'5	11'3
June.....	15'9	15'3	16'3	14'5	16'5	15'7	14'7	15'2
September	15'6	15'0	15'7	16'0	15'8	15'0	14'6	14'2
December	—	17'5	17'8	18'0	18'2	17'7	17'0	16'9

(II.) BIRTHS:—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'93.	Mean '83-92.	'92.	'91.	'90.	'89.	'88.	'87.
March	31'5	32'6	30'0	32'0	31'8	31'4	31'9	31'9
June.....	31'7	32'7	31'7	33'0	30'7	32'1	31'9	32'6
September	30'6	31'4	30'8	30'6	30'5	30'7	30'3	31'8
December	29'2	30'9	29'3	30'1	28'1	30'4	30'6	31'1

(III.) DEATHS:—Ratio per 1,000.

<i>Qrs. ended last day of</i>	'93.	Mean '83-92.	'92.	'91.	'90.	'89.	'88.	'87.
March	19'7	22'0	24'9	22'0	23'3	19'9	21'4	20'9
June.....	17'9	19'1	18'0	23'7	17'9	17'5	17'8	18'5
September	19'1	17'0	15'6	15'9	16'9	17'1	15'2	17'9
December	19'9	18'9	17'4	19'3	20'1	18'4	18'1	19'1

B.—Comparative Table of CONSOLS, PROVISIONS, COAL and PAUPERISM in each QUARTER of 1891-92-93.

Quarters ending	Average Prices of						PAUPERISM.	
	2¾l. per Cent. CONSOLS (for Money) per 100l. Stock.	DISCOUNT charged by the Bank of England.	WHEAT per Quarter in England and Wales.	MEAT per Pound at the Metropolitan Meat Market (by the Carcase), with the Mean Prices.		COAL (Seaborne) in the London Market per Ton.	Quarterly Average of the Number of Paupers Relieved on the Last Day of each Week.	
				Beef.	Mutton.		In-door.	Out-door.
1891	£ s. d.	£	s. d.	d. d. d.	d. d. d.	s. d.		
Mar. 31	96 16 6	3'35	32 11	3½—7¼ 5½ 7¾	6½—8½ 7¾	19 5	186,337	514,189
June 30	95 10 5	3'80	39 6	4¼—7½ 5½ 7¾	5¾—8¾ 7	18 2	172,510	490,721
Sept. 30	95 10 11	2'54	38 11	4¼—7¾ 6 7½	5¼—8½ 7½	18 8	164,799	474,575
Dec. 31	95 0 8	3'57	36 8	4¾—7½ 6 7½	5¼—8½ 7½	18 1	179,495	474,350
1892								
Mar. 31	95 14 10	3'12	33 8	4¾—7½ 5½ 7½	6—8½ 7½	19 —	190,747	505,021
June 30	96 16 8	2'18	30 11	4¾—6¾ 5¾ 7¼	6—8¾ 7¼	17 2	174,015	494,284
Sept. 30	96 18 10	2'00	29 3	4¾—7¼ 6 7½	5¾—8¼ 6¾	17 7	169,149	471,058
Dec. 31	97 3 7	2'79	27 5	3¾—7¾ 5½ 6¾	5—8½ 6¾	16 7	186,627	478,983
1893								
Mar. 31	98 6 5	2'64	25 7	3¾—7½ 5¾ 6¾	5½—8¼ 6¾	15 10	196,497	514,173
June 30	98 16 2	3'00	26 2	4¾—7 5¾ 6¾	5½—7¾ 6¾	13 8	178,968	491,303
Sept. 30	96 4 2	3'56	26 4	4¾—7¾ 6 7½	5½—8½ 6¾	18 5	181,514	488,946
Dec. 31	98 2 7	3'02	27 2	4—7½ 5¾ 7	5½—8½ 7	27 —	201,303	511,385

C.—Special Average Death-Rate Table:—ANNUAL RATE of MORTALITY per 1,000 in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1891-93.

	Area in Statute Acres.	Population Estimated in the middle of 1893.	Quarters ending	Annual Rate of Mortality per 1,000 in each Quarter of the Years			
				1893.	Mean '83-92.	1892.	1891.
TOWN DISTRICTS.							
All Registration Sub-Districts three-fourths of the population of which, as enumerated in 1891, resided within the boundaries of Urban Sanitary Districts existing in 1886	3,737,930	19,201,709	March ..	20.4	22.6	24.6	22.8
			June	18.7	19.7	18.5	24.7
			Sept.	20.6	18.3	16.6	16.8
			Dec.	20.9	20.2	18.3	20.3
			Year	20.2	20.2	19.5	21.1
COUNTRY DISTRICTS. All the remaining Registration Sub-Districts of England and Wales—not coming within the above definition of Town Districts	33,579,955	10,529,391	Year	17.4	17.6	18.1	18.5
			March ..	18.4	20.9	25.5	20.7
			June	16.4	17.9	17.2	21.7
			Sept.	16.5	14.7	13.9	14.2
			Dec.	18.2	16.8	15.8	17.6

D.—Special Town Table:—POPULATION; BIRTH-RATE and DEATH-RATE in each Quarter of 1893, in THIRTY-THREE Large Towns.

Cities and Boroughs.	Estimated Population in the Middle of the Year 1893.	Annual Rate to 1,000 Living during the Thirteen Weeks ending							
		1st April. (1st Quarter.)		1st July. (2nd Quarter.)		30th September. (3rd Quarter.)		30th December (4th Quarter.)	
		Births.	Deaths.	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
Thirty-three towns	10,327,846	33·2	22·0	32·2	19·8	31·5	21·8	30·7	22·6
London*	4,306,411	32·7	22·1	30·7	19·5	30·6	20·5	29·8	23·2
West Ham	227,405	39·0	18·9	35·6	14·8	34·4	20·8	33·6	21·2
Croydon	108,997	26·6	19·3	25·8	13·6	27·1	16·7	25·4	15·6
Brighton	117,833	27·5	20·9	24·3	16·4	24·6	18·2	25·0	18·1
Portsmouth	167,277	30·8	20·9	27·0	15·5	27·0	18·8	28·0	17·6
Plymouth	86,781	31·4	22·5	30·2	22·0	29·3	17·8	28·7	22·6
Bristol	225,028	31·4	20·1	31·4	17·1	29·9	16·1	28·8	22·4
Cardiff	142,435	37·2	20·7	37·2	19·4	36·4	19·1	33·4	19·7
Swansea	93,816	34·9	18·5	36·2	20·5	34·7	20·5	34·7	19·0
Wolverhampton	84,298	36·5	20·6	35·9	19·9	35·4	26·3	30·5	26·4
Birmingham	487,891	34·4	22·2	33·2	19·7	32·2	22·2	31·1	23·8
Norwich	104,184	33·0	23·3	31·7	15·6	29·2	19·6	29·6	18·5
Leicester	184,547	34·1	19·1	34·4	19·4	32·9	22·1	30·8	20·5
Nottingham	220,551	29·2	19·1	30·5	14·7	31·4	18·9	29·7	21·2
Derby	97,341	32·8	18·2	34·0	17·6	30·5	17·9	31·5	19·3
Birkenhead	103,817	33·7	19·7	34·6	19·3	32·3	19·9	32·0	23·3
Liverpool	510,514	37·3	25·8	36·4	27·1	35·9	28·4	34·3	28·1
Bolton	117,278	34·4	26·4	34·4	22·5	31·8	24·1	31·8	23·4
Manchester	515,598	34·0	26·0	34·7	24·4	33·2	25·1	32·4	24·2
Salford	203,431	33·2	24·2	37·7	22·4	34·0	25·0	34·1	24·7
Oldham	136,469	28·0	21·2	28·9	19·7	29·0	20·3	28·7	22·9
Burnley	93,462	34·8	20·2	35·7	20·5	34·2	24·4	30·9	22·4
Blackburn	124,005	33·1	21·6	31·6	20·6	30·2	28·0	28·7	22·7
Preston	110,225	36·9	24·0	34·6	26·2	35·6	33·2	33·3	22·1
Huddersfield	97,549	24·6	18·3	24·1	16·8	23·1	16·2	23·3	17·5
Halifax	91,918	23·8	21·3	25·6	16·9	26·0	16·2	23·0	15·0
Bradford	221,611	27·0	21·3	28·6	19·3	28·3	22·2	27·1	21·0
Leeds	382,093	33·0	24·3	34·0	20·9	32·2	24·0	30·4	20·0
Sheffield	333,922	35·7	20·8	35·2	20·6	34·5	25·0	33·8	22·8
Hull	208,709	35·0	19·9	34·6	17·2	33·7	26·5	33·7	23·8
Sunderland	134,515	36·5	20·1	37·4	20·0	33·7	27·3	34·8	22·9
Gateshead	90,938	39·3	19·7	35·1	17·7	33·7	20·8	37·8	19·0
Newcastle	196,997	35·3	20·1	33·3	20·3	33·2	21·7	33·1	21·9

* For the purposes of this table, London includes the Strand Union workhouse at Edmonton, the Holborn Union workhouse at Mitcham, and the metropolitan hospitals and asylums situated outside Registration London.

E.—Divisional Table:—MARRIAGES in the Year ending 30th September; and BIRTHS and DEATHS in the Year ending 31st December, 1893, as Registered Quarterly.

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 Enumerated POPULATION, 1891.	4 5 6 7 MARRIAGES in Quarters ending			
			31st December, 1892.	31st March, 1893.	30th June, 1893.	30th September, 1893.
		No.	No.	No.	No.	No.
ENGLD. & WALES....Totals	37,239,351	29,002,525	66,035	40,193	58,807	58,342
I. London	74,692	4,211,743	10,388	6,656	9,644	10,498
II. South-Eastern	3,991,604	2,867,538	6,236	3,338	5,475	5,318
III. South Midland	3,238,579	1,863,469	3,906	1,865	3,206	3,382
IV. Eastern	3,136,622	1,575,311	3,841	1,806	2,534	2,569
V. South-Western	4,997,695	1,908,998	4,074	2,573	3,591	3,296
VI. West Midland	3,964,632	3,250,007	7,530	4,210	6,775	6,353
VII. North Midland.....	3,535,223	1,806,415	4,250	2,449	4,121	3,315
VIII. North-Western.....	1,951,126	4,660,594	10,004	7,076	9,713	10,312
IX. Yorkshire	3,726,829	3,218,882	7,512	4,630	6,521	6,551
X. Northern	3,528,621	1,863,163	3,987	2,839	3,729	3,493
XI. Monmthsh. & Wales	5,093,728	1,776,405	4,307	2,751	3,498	3,255

8 DIVISIONS. (England and Wales.)	9 10 11 12 BIRTHS in each Quarter of 1893 ending				13 14 15 16 DEATHS in each Quarter of 1893 ending			
	31st March.	30th June.	30th Septem- ber.	31st Decem- ber.	31st March.	30th June.	30th Septem- ber.	31st Decem- ber.
	No.	No.	No.	No.	No.	No.	No.	No.
ENGLD. & WALES....Totals	231,289	235,109	229,147	218,637	144,626	132,860	143,380	149,057
I. London	35,126	33,007	32,837	31,995	23,242	20,378	21,581	24,512
II. South-Eastern	20,041	19,674	19,525	18,617	12,772	10,934	11,831	11,362
III. South Midland.....	13,650	14,019	13,642	13,140	8,027	6,882	7,334	8,173
IV. Eastern	12,609	12,845	12,174	11,645	7,279	6,422	7,077	7,297
V. South-Western	13,111	13,627	13,132	12,541	9,061	7,917	7,172	8,857
VI. West Midland	26,854	27,264	26,136	25,018	16,037	14,403	15,005	17,259
VII. North Midland.....	14,474	15,283	14,776	14,195	8,217	7,509	8,570	9,011
VIII. North-Western.....	38,655	39,905	38,612	36,725	25,453	25,454	27,809	26,821
IX. Yorkshire	25,010	26,285	26,041	24,483	16,467	15,171	17,930	16,681
X. Northern	16,527	16,962	16,628	15,876	8,738	8,721	10,540	9,745
XI. Monmthsh. & Wales	15,232	16,238	15,644	14,402	9,333	9,069	8,531	9,339

No. II.—SCOTLAND.

BIRTHS, DEATHS, AND MARRIAGES, IN THE YEAR

ENDED 31ST DECEMBER, 1893.

I.—*Serial Table :—Number of BIRTHS, DEATHS, and MARRIAGES in Scotland, and their Proportion to the Population estimated to the Middle of each Year, during each Quarter of the Years 1893-89 inclusive.*

	1893.		1892.		1891.		1890.		1889.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
<i>1st Quarter—</i>										
Births	31,351	3'11	30,311	2'99	31,563	3'17	30,124	2'96	29,830	2'97
Deaths	21,009	2'08	22,462	2'22	22,471	2'26	23,316	2'29	19,609	1'95
Marriages ..	6,315	0'62	7,257	0'72	6,952	0'70	6,687	0'66	6,318	0'63
Mean Tem- perature }	39°·1		36°·3		38°·2		40°·1		38°·6	
<i>2nd Quarter—</i>										
Births	33,803	3'31	33,195	3'28	33,395	3'31	31,789	3'09	32,294	3'18
Deaths	19,588	1'92	18,623	1'84	20,804	2'07	19,607	1'91	18,213	1'79
Marriages ..	6,959	0'68	7,168	0'71	7,206	0'72	7,079	0'69	6,546	0'64
Mean Tem- perature }	52°·2		48°·4		47°·9		49°·5		51°·0	
<i>3rd Quarter—</i>										
Births	31,287	3'03	30,424	2'97	30,738	3'02	30,300	2'92	30,277	2'95
Deaths	18,638	1'81	15,622	1'53	16,809	1'65	16,668	1'60	16,787	1'63
Marriages ..	6,675	0'65	6,684	0'65	6,560	0'64	6,480	0'62	6,257	0'61
Mean Tem- perature }	56°·3		53°·5		55°·7		55°·4		54°·6	
<i>4th Quarter—</i>										
Births	30,599	2'97	31,081	3'03	30,269	2'97	29,317	2'82	30,369	2'96
Deaths	20,406	1'98	18,861	1'84	23,464	2'30	19,387	1'87	18,594	1'81
Marriages ..	7,141	0'69	7,528	0'74	7,231	0'71	7,195	0'69	7,197	0'70
Mean Tem- perature }	42°·3		39°·6		41°·9		41°·5		42°·6	
<i>Year—</i>										
Population.	4,093,959		4,063,451		4,033,180		4,003,132		3,973,305	
Births	127,040	3'10	125,011	3'08	125,965	3'12	121,530	3'04	122,770	3'09
Deaths	79,641	1'95	75,568	1'86	83,548	2'07	78,978	1'97	73,203	1'84
Marriages ..	27,090	0'66	28,637	0'70	27,949	0'69	27,441	0'69	26,318	0'66

II.—*Special Average Table:—Number of Births, Deaths, and Marriages in Scotland and in the Town and Country Districts for each Quarter of the Year ending 31st December, 1893, and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

Registration Groups of Districts.	Total Births.		Illegitimate Births.		Deaths.		Marriages.	
	Number.	Annual Rate per Cent.	Number.	Per Cent. of Total Births.	Number.	Annual Rate per Cent.	Number.	Annual Rate per Cent.
<i>1st Quarter—</i>								
SCOTLAND	31,351	3'11	2,392	7'6	21,005	2'08	6,315	0'62
Principal towns	12,875	3'20	942	7'3	9,466	2'36	3,046	0'76
Large „	4,192	3'32	260	6'2	2,702	2'14	892	0'71
Small „	7,008	3'22	490	7'0	4,250	1'95	1,246	0'57
Mainland rural	6,592	2'83	668	10'1	4,082	1'75	970	0'42
Insular „	684	2'22	32	4'7	505	1'64	161	0'52
<i>2nd Quarter—</i>								
SCOTLAND	33,803	3'31	2,355	7'0	19,588	1'92	6,959	0'68
Principal towns	14,222	3'50	964	6'8	8,796	2'16	3,516	0'87
Large „	4,659	3'65	280	6'0	2,588	2'03	852	0'67
Small „	7,436	3'38	461	6'2	3,993	1'82	1,283	0'58
Mainland rural	6,879	2'92	621	9'0	3,782	1'61	1,237	0'52
Insular „	607	1'95	29	4'8	429	1'38	71	0'23
<i>3rd Quarter—</i>								
SCOTLAND	31,287	3'03	2,327	7'4	18,638	1'81	6,675	0'65
Principal towns	12,982	3'16	977	7'5	8,092	1'97	3,434	0'84
Large „	4,252	3'29	238	5'6	2,598	2'01	959	0'74
Small „	6,903	3'10	463	6'7	3,963	1'78	1,308	0'59
Mainland rural	6,415	2'69	612	9'5	3,545	1'49	918	0'39
Insular „	735	2'33	37	5'0	440	1'40	56	0'18
<i>4th Quarter—</i>								
SCOTLAND	30,599	2'97	2,326	7'6	20,406	1'98	7,141	0'69
Principal towns	12,870	3'13	914	7'1	8,862	2'16	3,097	0'75
Large „	3,981	3'08	245	6'2	2,610	2'02	845	0'65
Small „	6,817	3'07	515	7'6	4,206	1'89	1,548	0'70
Mainland rural	6,226	2'61	623	10'0	4,219	1'77	1,502	0'63
Insular „	705	2'24	29	4'1	509	1'62	149	0'47

Population of Scotland.

Population.	Scotland.	Principal Towns.	Large Towns.	Small Towns.	Mainland Rural.	Insular Rural.
By Census of 1891.....	4,025,647	1,583,777	497,511	864,595	953,812	125,952
Estimated to the middle of 1893	4,093,959	1,629,600	512,608	881,907	944,869	124,975

III.—*Divisional Table:—MARRIAGES, BIRTHS, and DEATHS Registered in the Year ended 31st December, 1893.*

(Compiled from the Registrar-General's Quarterly Returns.)

1	2	3	4	5	6
DIVISIONS. (Scotland)	AREA in Statute Acres.	POPULATION, 1891. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
SCOTLAND Totals	19,639,377	4,025,647	27,090	127,040	79,637
I. Northern	2,261,622	118,237	490	2,562	1,740
II. North-Western.....	4,739,876	163,836	710	3,902	2,785
III. North-Eastern	2,429,594	433,580	2,727	13,125	7,355
IV. East Midland	2,790,492	629,035	4,026	18,176	12,140
V. West Midland	2,693,176	314,840	1,708	9,580	6,126
VI. South-Western.....	1,462,397	1,563,253	11,952	56,501	34,625
VII. South-Eastern	1,192,524	599,170	4,376	18,011	11,294
VIII. Southern	2,069,696	203,696	1,101	5,183	3,572

No. III.—GREAT BRITAIN AND IRELAND.

SUMMARY of MARRIAGES, in the Year ended 30th September, 1893; and of BIRTHS and DEATHS, in the Year ended 31st December, 1893.

(Compiled from the Quarterly Returns of the respective Registrars-General.)

COUNTRIES.	[000's omitted.]		Marriages.	Per 1,000 of Popu- lation.	Births.	Per 1,000 of Popu- lation.	Deaths.	Per 1,000 of Popu- lation.
	Area in Statute Acres.	Popu- lation, 1891. (Persons.)						
		No.	No.	Ratio.	No.	Ratio.	No.	Ratio.
England and Wales	37,239,	29,003,	223,377	7·7	914,305	31·5	569,997	19·6
Scotland	19,639,	4,026,	27,477	6·8	127,040	31·5	79,641	19·8
Ireland	20,323,	4,705,	21,460	4·6	106,031	22·5	82,822	17·6
GREAT BRITAIN AND IRELAND }	77,201,	37,734,	272,314	7·2	1,147,376	30·4	732,460	19·4

F.—General Meteorological Table,
[Abstracted from the particulars supplied to the

1893. Months.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.			Evaporation.		Dew Point.		Air—Daily Range.		Water of the Thames	Mean.	Diff. from Average of 52 Years.	Mean.	Diff. from Average of 52 Years.
	Mean.	Diff. from Average of 122 Years.	Diff. from Average of 52 Years.	Mean.	Diff. from Average of 52 Years.	Mean.	Diff. from Average of 52 Years.	Mean.	Diff. from Average of 52 Years.					
Jan.....	35.4	-1.2	-2.9	34.1	-2.7	32.1	-2.7	8.1	-1.4	...	In. .182	In. -.018	Gr. 2.1	Gr. -0.3
Feb.....	41.1	+2.3	+1.7	39.4	+1.8	37.3	+2.2	11.5	+0.4	...	.223	+0.016	2.6	+0.2
Mar. ...	46.2	+5.2	+4.8	42.3	+3.3	37.9	+2.2	21.0	+6.3	...	.228	+0.016	2.6	+0.1
Means...	40.9	+2.1	+1.2	38.6	+0.8	35.8	+0.6	13.5	+1.8	...	.211	+0.005	2.4	0.0
April ...	51.4	+5.3	+4.6	45.9	+2.3	40.2	0.0	24.6	+6.2	...	.249	-.001	2.8	-0.1
May.....	57.7	+5.2	+5.1	51.6	+2.7	46.1	+1.1	24.5	+4.0	...	.312	+0.013	3.5	+0.1
June ...	61.8	+3.5	+2.9	55.2	+0.6	49.5	-1.2	25.2	+4.2	...	.355	-.017	4.0	-0.2
Means...	57.0	+4.7	+4.2	50.9	+1.9	45.3	-0.0	24.8	+4.8	...	.305	-.002	3.4	-0.1
July.....	63.1	+1.5	+1.1	57.9	+0.3	53.5	-0.5	19.9	-1.0	...	.410	-.006	4.6	-0.1
Aug. ...	65.5	+4.6	+4.2	59.5	+2.2	54.8	+0.8	22.5	+2.7	...	.430	+0.013	4.7	0.0
Sept. ...	57.1	+0.5	0.0	52.8	-1.2	48.7	-2.4	19.5	+1.2	...	.344	-.035	3.8	-0.5
Means...	61.9	+2.2	+1.8	56.7	+0.4	52.3	-0.7	20.6	+1.0	...	.395	-.009	4.4	-0.2
Oct.....	51.5	+2.1	+1.8	48.5	+0.8	45.4	-0.2	14.7	+0.1	...	.304	-.003	3.4	-0.4
Nov. ...	41.8	-0.7	-1.7	39.7	-1.8	37.3	-2.3	10.9	-0.5	...	.223	-.024	2.6	-0.3
Dec. ...	40.6	+1.6	+1.0	38.8	+0.6	36.6	+0.4	11.5	+2.1	...	.217	+0.001	2.5	-0.1
Means...	44.6	+1.0	+0.4	42.3	-0.1	39.8	-0.7	12.4	+1.7	...	.248	-.009	2.8	-0.3

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies

About London the mean daily temperature of the air was generally above its average from October 1st to the 29th, being particularly so on the 14th, 15th, 16th, and 21st, when it was as much as $9^{\circ}3$, $10^{\circ}6$, $10^{\circ}3$, and $9^{\circ}2$ respectively above its average; the mean daily excess for the twenty-nine days ending October 29th being $2^{\circ}1$; from October 30th to November 27th, it was generally below, being as much as $9^{\circ}7$ below on October 31st, and on several days in November it was as much as 6° , 7° , and 8° below its average, the mean daily deficiency for the twenty-nine days ending November 27th being $3^{\circ}2$; from November 28th to the 30th it was very mild, the mean daily excess for these three days being $7^{\circ}3$; from December 1st to the 5th it was below its average, being particularly so on the 2nd and 3rd, when it was as much as $11^{\circ}4$ and $10^{\circ}4$ respectively below; the mean daily deficiency for the five days being $5^{\circ}7$;

for the Year ended 31st December, 1893.

Registrar-General by JAMES GLAISHER, Esq., F.R.S., &c.]

Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass.					1893. Months.
Mean.	Diff. from Average of 52 Years.	Mean.	Diff. from Average of 52 Years.	Mean.	Diff. from Average of 52 Years.	Amnt.	Diff. from Average of 78 Years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.	
									At or below 30°.	Between 30° and 40°.	Above 40°.			
90	+ 3	In. 29·885	In. +·121	Grs. 560	Grs. + 6	In. 1·45	In. -0·41	Miles. 271	16	14	1	13·9	43·1	January
87	+ 2	29·542	-·262	547	- 6	2·72	+1·18	326	6	20	2	21·6	41·8	Feb.
74	- 7	29·964	+·216	549	- 1	0·43	-1·12	258	15	13	3	20·9	43·0	March
84	- 1	29·797	+·025	552	0	Sum 4·60	Sum -0·35	Mean 285	Sum 37	Sum 47	Sum 6	Lowest 13·9	Highest 43·1	Means
65	-15	29·990	+·246	543	0	0·12	-1·61	230	6	22	2	24·7	41·4	April
66	-12	29·888	+·105	534	- 6	0·53	-1·54	240	1	18	12	29·4	47·0	May
64	-11	29·838	+·026	529	- 3	0·82	-1·16	229	1	4	25	29·8	52·0	June
65	-13	29·905	+·126	535	- 3	Sum 1·47	Sum -4·31	Mean 233	Sum 8	Sum 44	Sum 39	Lowest 24·7	Highest 52·0	Means
71	- 5	29·732	-·061	526	- 2	3·33	+0·76	233	0	1	30	39·2	57·3	July
69	- 8	29·861	+·081	525	- 4	1·25	-1·14	238	0	4	27	33·8	58·1	August
73	- 8	29·698	-·108	532	- 1	1·29	-1·06	258	1	11	18	29·0	54·5	Sept.
71	- 7	29·764	-·029	528	- 2	Sum 5·87	Sum -1·44	Mean 243	Sum 1	Sum 16	Sum 75	Lowest 29·0	Highest 58·1	Means
80	- 9	29·745	+·034	539	+ 1	4·16	+1·39	266	2	19	10	27·7	55·0	October
85	- 6	29·807	+·065	551	+ 3	1·84	-0·51	352	14	14	2	21·8	44·0	Nov.
86	- 3	29·831	+·037	552	- 1	2·19	+0·24	307	17	14	0	17·1	36·1	Dec.
84	- 6	29·794	+·045	547	0	Sum 8·19	Sum +1·12	Mean 308	Sum 33	Sum 47	Sum 12	Lowest 17·1	Highest 55·0	Means

below the average, and that the sign (+) plus signifies above the average.

from December 6th to the 28th it was generally above, being as much as 10°·8 above on the 13th, the mean daily excess for the twenty-three days being 3°·2; and from December 29th to the 31st it was below, the mean daily deficiency being 5°·5.

The mean temperature of the air for December was 40°·6, being 1°·6 and 1°·0 above the average of one hundred and twenty-two and fifty-two years respectively; it was 3°·9 higher than in 1892, 0°·5 lower than in 1891, and 10°·8 higher than in 1890.

The mean high day temperature of the air for December was 45°·9, being 1°·6 above the average of fifty-two years; it was 5°·1 higher than in 1892, 0°·6 lower than in 1891, and 12°·6 higher than in 1890.

Trade of United Kingdom, 1893-92-91.—Distribution of Exports* from United Kingdom according to their Declared Real Value; and the Declared Real Value (Ex-duty) Imports at Port of Entry, and therefore including Freight and Importer's Profit.

Merchandise (excluding Gold and Silver) Imported from, and Exported to, the following Foreign Countries, &c.	[000's omitted.]					
	1893.		1892.		1891.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES.	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland } Central Europe; viz., Germany, Holland, and Belgium } Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries) } Southern Europe; viz., Italy, Austrian empire, Greece, Roumania, Bulgaria, & Malta } Levant; viz., Turkey, Asiatic and European (including Cyprus), and Egypt } Northern Africa; viz., Tripoli, Tunis, Algeria and Morocco } Western Africa } Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands } Indian Seas, Siam, Sumatra, Java, Philippines; other Islands } South Sea Islands } China and Japan, including Hong Kong } United States of America } Mexico and Central America } Foreign West Indies, Hayti, &c. } South America (Northern), New Granada, Venezuela, and Ecuador } " (Pacific), Peru, Bolivia, Chili, and Patagonia } " (Atlantic) Brazil, Uruguay, and Argentine Republic } Whale Fisheries; Grnld., Davis' Straits, Southn. Whale Fishery, Falkland Islands, and French Possessions in North America }	39,511, 72,103, 56,769, 10,395, 13,849, 1,316, 398, 607, 3,794, 79, 5,916, 91,776, 1,796, 247, 932, 5,175, 9,615, 232,	13,382, 34,211, 19,955, 9,197, 9,140, 869, 851, 1,137, 2,898, 80, 10,165, 24,023, 1,840, 2,035, 2,189, 3,174, 14,848, 35,	34,971, 71,562, 58,305, 9,477, 16,448, 1,429, 417, 844, 4,166, 68, 5,232, 108,186, 1,543, 175, 842, 5,445, 8,342, 122,	12,548, 33,362, 21,892, 9,897, 9,383, 1,063, 1,078, 934, 3,157, 64, 10,568, 26,546, 2,128, 2,213, 1,732, 4,498, 14,844, 40,	43,920, 71,587, 58,699, 12,337, 16,577, 1,285, 594, 712, 4,638, 59, 6,973, 104,409, 1,894, 249, 730, 4,680, 8,075, 150,	12,911, 35,641, 24,751, 11,311, 10,341, 1,181, 1,021, 1,521, 3,461, 171, 11,871, 27,541, 2,841, 2,321, 2,361, 3,031, 13,701, 31
<i>Total—Foreign Countries</i>	314,510,	150,029,	327,574,	155,947,	337,568,	166,051,
II.—BRITISH POSSESSIONS.						
British India, Ceylon, and Singapore } Austral. Cols.—N. So. W., Victoria & Queensld. } " " So. Aus., W. Aus., Tasm., N. Zealand, & Fiji Islands } British North America } " W. Indies with Btsh. Guiana & Honduras } Cape and Natal } Brt. W. Co. of Af., Ascension and St. Helena } Mauritius } Channel Islands }	35,047, 18,856, 11,222, 13,314, 2,838, 5,552, 2,166, 244, 1,231,	31,458, 9,552, 5,564, 7,202, 3,354, 8,598, 1,647, 306, 786,	39,327, 19,159, 11,384, 14,566, 3,134, 5,463, 1,788, 230, 1,169,	30,940, 13,086, 6,190, 7,428, 3,112, 7,929, 1,407, 270, 768,	41,760, 18,535, 12,727, 12,606, 2,741, 6,254, 1,782, 268, 1,200,	34,651, 18,471, 7,021, 7,241, 3,101, 7,951, 1,661, 281, 751,
<i>Total—British Possessions</i>	90,470,	68,467,	96,220,	71,130,	97,873,	81,171,
General Total	£404,980,	218,496,	423,794,	227,077,	435,441,	247,222,

* i.e., British and Irish produce and manufactures.

Trade of United Kingdom, for the Years 1892-88.—Declared Value of the Total Exports of Foreign and Colonial Produce and Manufactures to each Foreign Country and British Possession.

Merchandise Exported to the following Foreign Countries, &c.	[000's omitted.]				
	1892.	1891.	1890.	1889.	1888.
I.—FOREIGN COUNTRIES.					
Northern Europe; viz., Russia, Sweden, Norway, Denmark, & Iceland, & Heligoland	£ 5,648,	£ 4,897,	£ 5,507,	£ 5,660,	£ 4,849,
Central Europe; viz., Germany, Holland and Belgium	24,724,	22,564,	23,504,	25,735,	24,177,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)	7,723,	8,940,	9,459,	8,879,	10,508,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	1,309,	1,153,	1,356,	1,478,	1,461,
Levant; viz., Turkey, Roumania, Syria and Palestine, and Egypt	670,	694,	727,	705,	619,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco	129,	145,	128,	151,	124,
Western Africa	86,	106,	180,	149,	168,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands	22,	—	—	—	—
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	69,	52,	54,	88,	72,
South Sea Islands	—	—	—	—	—
China, including Hong Kong and Japan	523,	448,	473,	524,	463,
United States of America	14,865,	13,522,	14,272,	13,585,	12,314,
Mexico and Central America	197,	321,	157,	157,	163,
Foreign West Indies and Hayti	1,316,	1,024,	1,055,	963,	881,
South America (Northern), New Granada, Venezuela and Ecuador	134,	116,	92,	99,	78,
„ (Pacific), Peru, Bolivia, Chili, and Patagonia	394,	293,	347,	412,	378,
„ (Atlantic), Brazil, Uruguay, and Argentine Confed.	501,	464,	491,	795,	561,
Other countries (unenumerated)	81,	181,	184,	145,	132,
<i>Total—Foreign Countries</i>	58,391,	54,920	57,986,	59,525,	56,948,
II.—BRITISH POSSESSIONS.					
British India, Ceylon, and Singapore	1,303,	1,542,	1,774,	1,540,	1,485,
Austral. Cols.—New South Wales and Victoria, So. Aus., W. Aus., Tasm., and N. Zealand	2,247,	2,756,	2,464,	2,742,	3,186,
British North America	1,101,	1,054,	1,047,	1,286,	1,135,
„ W. Indies with Btsh. Guiana & Honduras	378,	458,	420,	388,	380,
Cape and Natal	665,	681,	675,	802,	495,
Port. W. Co. of Af., Ascension and St. Helena	213,	181,	89,	79,	75,
St. Mauritius	21,	20,	26,	29,	34,
Channel Islands	210,	216,	193,	209,	230,
Other possessions	34,	51,	48,	57,	75,
<i>Total—British Possessions</i>	6,172,	6,959,	6,736,	7,132,	7,095,
General Total	£ 64,563,	61,879,	64,722,	66,657,	64,043,

IMPORTS.—(United Kingdom.)—For the Years 1893-92-91-90-89.—Declared Real Value (*Ex-duty*), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.

[000's omitted.]

FOREIGN ARTICLES IMPORTED.		1893.	1892.	1891.	1890.	1889.
		£	£	£	£	£
RAW MATLS.— <i>Textile, &c.</i>	Cotton, Raw ...	30,685,	37,888,	46,081,	42,757,	45,269,
	Wool	26,303,	28,451,	29,729,	28,586,	30,301,
	Silk*	14,064,	13,367,	14,148,	14,032,	15,387,
	Flax	2,518,	2,743,	2,772,	2,856,	3,066,
	Hemp and Jute	5,777,	6,354,	7,339,	7,868,	8,694,
	Indigo	1,391,	1,357,	1,043,	1,521,	1,783,
		80,738,	90,160,	101,112,	97,620,	104,500,
" " <i>Various.</i>	Hides	2,181,	2,085,	2,437,	2,514,	3,074,
	Oils	2,704,	2,539,	2,639,	2,468,	2,618,
	Metals	18,941,	19,320,	21,123,	23,711,	22,085,
	Tallow	2,163,	1,748,	1,772,	1,729,	1,645,
	Timber	15,391,	17,152,	14,924,	17,127,	19,826,
		41,380,	42,844,	42,895,	47,549,	49,248,
" " <i>Agricltl.</i>	Guano	95,	189,	139,	167,	191,
	Seeds	7,016,	7,044,	7,554,	6,872,	7,947,
		7,111,	7,233,	7,693,	7,039,	8,138,
TROPICAL, &c., PRODUCE.	Tea	10,217,	10,047,	10,733,	9,998,	10,023,
	Coffee and Chic...	4,063,	3,990,	3,495,	4,058,	4,411,
	Sugar & Molasses	22,262,	19,949,	20,030,	18,261,	22,653,
	Tobacco	3,566,	3,538,	3,424,	3,543,	3,974,
	Rice	2,140,	2,789,	2,799,	2,549,	2,689,
	Fruits	6,035,	7,148,	7,007,	6,723,	6,215,
	Wines	5,303,	6,020,	5,985,	5,891,	5,909,
	Spirits	1,915,	2,187,	2,277,	2,128,	1,859,
		55,501,	55,668,	55,750,	53,151,	57,733,
FOOD	Grain and Meal.	51,300,	58,733,	62,022,	53,045,	50,808,
	Provisions	53,269,	52,232,	48,146,	51,198,	47,454,
		104,569,	110,965,	110,168,	104,243,	98,262,
Remainder of Enumerated Articles ...		68,834,	71,574,	72,087,	66,517,	65,103,
TOTAL ENUMERATED IMPORTS ...		358,133,	378,444,	389,705,	376,119,	382,984,
Add for UNENUMERATED IMPORTS (say)		46,935,	45,350,	45,736,	44,767,	44,227,
TOTAL IMPORTS		405,068,	423,794,	435,441,	420,886,	427,211,

* "Silk," inclusive of manufactured silk, "not made up."

EXPORTS.—(United Kingdom.)—For the Years 1893-92-91-90-89.—Declared Real Value, at Port of Shipment, of Articles of BRITISH and IRISH Produce and Manufactures Exported from the United Kingdom.

[000's omitted.]

BRITISH PRODUCE. &c., EXPORTED.		1893.	1892.	1891.	1890.	1889.
		£	£	£	£	£
MANFRS.— <i>Textile.</i>	Cotton Manufactures..	54,717,	56,266,	60,230,	62,079,	58,826,
	„ Yarn	9,060,	9,693,	11,177,	12,352,	11,711,
	Woolen Manufactures	16,428,	17,907,	18,447,	20,422,	21,340,
	„ Yarn	6,030,	5,276,	5,046,	4,089,	4,342,
	Silk Manufactures.....	1,516,	1,655,	1,745,	2,230,	2,507,
	„ Yarn	383,	323,	516,	478,	509,
	Linen Manufactures	4,779,	5,166,	5,032,	5,716,	5,777,
	„ Yarn	1,005,	890,	899,	866,	839,
		93,918,	97,176,	103,092,	108,232,	105,851,
		4,264,	4,847,	5,151,	5,036,	4,977,
„ <i>Sewed.</i>	Apparel	1,495,	1,758,	2,000,	2,113,	2,251,
	Haberd. and Millnry.					
		5,759,	6,605,*	7,151,	7,149,	7,228,
METALS, &c.	Hardware	2,048,	2,195,	2,528,	2,765,	2,988,
	Machinery	13,970,	13,887,	15,818,	16,413,	15,255,
	Iron	20,614,	21,766,	26,877,	31,582,	29,153,
	Copper and Brass.....	3,477,	4,218,	4,345,	5,058,	3,787,
	Lead and Tin	1,160,	1,253,	1,174,	1,315,	1,282,
	Coals and Culm	14,488,	16,811,	18,895,	19,020,	14,794,
		55,757,	60,130,	69,637,	76,153,	67,259,
		2,753,	2,942,	3,121,	3,113,	3,240,
<i>Ceramic Manufcts.</i> Earthenware and Glass						
<i>Indigenous Mnfrs.</i>	Beer and Ale.....	1,506,	1,652,	1,695,	1,877,	1,858,
	<i>and Products.</i> Butter	86,	82,	124,	138,	144,
	Cheese	44,	45,	47,	48,	49,
	Candles	353,	344,	314,	262,	231,
	Salt.....	505,	539,	596,	653,	539,
	Spirits	1,178,	1,367,	1,296,	1,250,	1,176,
		3,672,	4,029,	4,072,	4,228,	3,997,
		1,263,	1,290,	1,389,	1,325,	1,295,
<i>Various Manufcts.</i>	Books, Printed	522,	533,	592,	647,	—
	Furniture	3,841,	3,758,	4,229,	4,279,	2,787,
	Leather Manufactures	646,	586,	571,	535,	503,
	Soap	307,	322,	391,	404,	438,
	Plate and Watches	816,	865,	916,	968,	965,
	Stationery	7,395,	7,354,	8,088,	8,158,	5,988,
		35,127,	35,358,	37,656,	42,354,	37,230,
Remainder of Enumerated Articles		14,115,	13,483,	14,418,	14,156,	17,299,
Unenumerated Articles.....						
TOTAL EXPORTS.....		218,496,	227,077,	247,235,	263,543,	248,092,

SHIPPING.—(United Kingdom.)—Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the Years ended December, 1893-92-91.

Countries from whence Entered and to which Cleared.	Total British and Foreign.					
	1893.		1892.		1891.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
FOREIGN COUNTRIES.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Russia { Northern ports	1,463,306	1,344,850	1,380,682	1,165,695	1,478,096	1,143,145
{ Southern „	850,572	187,017	508,025	180,556	797,191	251,574
Sweden	1,587,617	1,267,113	1,628,177	1,305,803	1,556,485	1,270,064
Norway	1,200,254	866,265	1,283,800	881,267	1,171,293	899,575
Denmark.....	347,838	1,082,987	354,183	1,074,116	376,442	1,086,421
Germany.....	1,793,327	3,481,511	1,948,003	3,464,223	1,974,764	3,782,367
Holland	2,069,284	1,876,389	2,017,965	1,951,566	1,790,742	1,902,070
Belgium	1,571,819	1,409,545	1,466,255	1,487,994	1,454,371	1,474,902
France	2,205,266	3,760,985	2,231,548	3,986,037	2,191,863	4,028,542
Spain	2,604,824	1,345,053	2,533,505	1,382,630	2,232,083	1,421,538
Portugal	131,863	386,639	129,090	421,351	133,225	446,683
Italy	228,034	2,303,148	228,994	2,276,135	237,467	2,232,207
Austrian territories	66,904	181,863	43,290	157,688	47,975	97,991
Greece	134,847	116,586	120,508	148,057	108,735	155,944
Turkey	290,881	386,871	318,875	355,741	283,982	341,617
Roumania	430,286	207,823	260,962	184,346	374,408	175,677
Egypt	364,843	830,476	435,922	933,350	447,304	976,001
United States of America	5,300,942	3,608,863	6,109,057	3,937,828	5,255,570	3,618,191
Mexico, Foreign West Indies, and Central America	60,302	343,752	50,576	399,203	74,589	392,094
Brazil	152,925	794,566	135,102	839,743	130,554	893,276
Peru	83,921	86,596	55,205	62,896	19,443	43,296
Chili	215,903	314,111	259,206	326,121	268,546	369,133
China	143,371	34,027	125,887	31,262	152,623	90,663
Other countries	1,145,770	1,646,612	1,222,918	1,627,550	1,109,608	1,485,019
Total, Foreign Countries	24,444,899	27,863,648	24,847,735	28,581,158	23,667,359	28,577,993
BRITISH POSSESSIONS.						
North American Colonies	1,485,661	815,919	1,592,250	806,539	1,320,818	816,683
East Indies, including Ceylon, Singapore, and Mauritius	1,196,488	1,787,192	1,376,070	1,922,644	1,519,890	1,879,419
Australia and New Zealand	773,150	723,892	772,887	831,733	747,069	1,054,173
West Indies	96,797	253,583	103,034	274,351	97,341	269,790
Channel Islands.....	358,108	269,588	407,244	280,127	321,223	250,235
Other possessions	440,633	1,238,629	430,649	1,247,273	427,084	1,365,147
Total, British Possessions	4,350,837	5,088,803	4,682,134	5,362,667	4,433,425	5,635,447
TOTAL FOREIGN COUNTRIES AND BRITISH POSSESSIONS.						
Twelve Months { 1893.....	28,795,736	32,952,451	—	—	—	—
{ ended '92.....	—	—	29,529,869	33,943,825	—	—
December, { '91.....	—	—	—	—	28,100,784	34,213,440

GOLD AND SILVER BULLION AND SPECIE. — (United Kingdom.)
 --Declared Real Value of, IMPORTED AND EXPORTED for the Years
 1893-92-91.

[000's omitted.]

Countries.	1893.		1892.		1891.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
Imported from—	£	£	£	£	£	£
Australia	3,707,	155,	3,157,	273	4,280,	144,
S. America, Brazil, } Mexico, W. Indies }	2,504,	1,871,	2,370,	2,001,	4,535,	2,171,
United States	4,232,	7,268,	1,050,	5,303,	7,675,	3,984,
	10,443,	9,294,	6,577,	7,577,	16,490,	6,299,
France	1,691,	1,387,	1,111,	1,336,	1,687,	1,527,
Germany, Holland, } Belg., and Sweden }	1,716,	761,	506,	1,296,	920,	1,253,
Portugal, Spain, } and Gibraltar }	1,390,	70,	2,264,	118,	6,454,	66,
Malta and Egypt.....	1,082,	33,	580,	12,	41,	28,
China, with Hong } Kong and Japan }	1,623,	—	2,895,	151,	1,141,	3,
West Coast of Africa	158,	22,	207,	38,	178,	35,
All other Countries	6,129,	346,	7,443,	218,	3,364,	105,
Totals Imported	24,232,	11,913,	21,583,	10,746,	30,275,	9,316,
Exported to—						
France	786,	373,	3,819,	151,	5,539,	761,
Germany, Holland, } Belg. & Sweden }	7,126,	887,	6,844,	402,	7,780,	405,
Portugal, Spain, } and Gibraltar }	616,	28,	1,215,	879,	1,095,	4,012,
	8,528,	1,288,	11,878,	1,432,	14,414,	5,178,
B. India, China, } Hong Kong and }	917,	11,639,	174,	11,875,	1,500,	7,052,
Japan	5,917,	3,	132,	18,	3,163,	9,
United States	—	47,	—	4,	—	11,
South Africa	777,	125,	1,510,	417,	2,659,	80,
S. America, Brazil, } Mexico, W. Indies }	3,432,	358,	1,138,	333,	2,432,	731,
All other Countries						
Totals Exported	19,571,	13,460,	14,832,	14,079,	24,168,	13,061,
Excess of imports	4,661,	—	6,751,	—	6,107,	—
„ exports	—	1,547,	—	3,333,	—	3,745,

BRITISH CORN.—*Gazette Average Prices (ENGLAND AND WALES),*
Weekly for 1893.

Weeks ended on Saturday.	Weekly Average. (Per Imperial Quarter.)			Weeks ended on Saturday.	Weekly Average. (Per Imperial Quarter.)		
	Wheat.	Barley.	Oats.		Wheat.	Barley.	Oats.
1893.	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	1893.	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Jan. 7	25 10	24 9	16 8	July 1	26 9	20 9	21 5
„ 14	26 4	25 6	16 11	„ 8	26 8	20 6	21 —
„ 21	26 6	25 7	17 —	„ 15	26 8	22 3	22 3
„ 28	26 4	25 6	17 3	„ 22	26 5	20 3	21 9
				„ 29	26 5	23 1	21 7
Feb. 4	26 3	25 4	17 5	Aug. 5	26 2	21 8	21 5
„ 11	25 11	25 —	17 11	„ 12	26 3	21 11	20 6
„ 18	25 7	24 11	17 10	„ 19	26 5	22 5	19 6
„ 25	25 5	25 1	18 —	„ 26	25 11	26 9	18 6
March 4	25 1	25 2	17 11	Sept. 2	25 5	26 9	18 7
„ 11	25 —	25 2	18 1	„ 9	25 7	27 2	17 4
„ 18	24 9	25 0	18 7	„ 16	26 —	27 8	17 6
„ 25	24 8	25 5	18 3	„ 23	26 9	27 10	17 9
				„ 30	27 6	28 4	17 11
April 1	24 9	25 11	18 4	Oct. 7	27 10	29 —	17 10
„ 8	24 9	25 6	17 11	„ 14	27 9	29 5	18 0
„ 15	24 10	24 8	18 7	„ 21	27 6	29 6	18 1
„ 22	25 5	24 5	18 8	„ 28	27 6	29 6	18 2
„ 29	25 10	24 —	19 3				
May 6	25 10	23 11	19 5	Nov. 4	27 4	29 5	18 2
„ 13	26 4	22 7	19 4	„ 11	27 4	29 3	18 1
„ 20	27 —	23 2	19 8	„ 18	27 4	29 2	18 2
„ 27	27 6	25 —	19 6	„ 25	27 1	28 9	18 3
June 3	27 5	24 2	20 4	Dec. 2	27 —	28 8	18 3
„ 10	27 4	22 10	20 —	„ 9	26 9	29 1	18 4
„ 17	26 11	23 5	21 1	„ 16	26 9	28 10	18 3
„ 24	26 9	23 3	21 3	„ 23	26 6	29 —	18 0
				„ 30	26 6	29 2	17 11

BRITISH CORN.—*Gazette Average Prices (ENGLAND AND WALES),
Summary of, for 1893, with those for 1892 added for Comparison.*

Average for	Per Imperial Quarter, 1893.						Per Imperial Quarter, 1892.					
	Wheat.		Barley.		Oats.		Wheat.		Barley.		Oats.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
January.....	26	3	25	4	16	11	35	4	29	2	20	6
February	25	9	25	1	17	9	32	6	28	2	19	11
March	24	10	25	2	18	2	32	11	27	8	20	4
<i>First quarter</i> ...	25	7	25	2	17	7	33	7	28	4	20	3
April	25	1	24	10	18	6	31	2	26	9	20	6
May	26	8	23	8	19	5	31	5	25	4	21	2
June	27	1	23	5	20	8	30	1	24	2	21	9
<i>Second quarter</i>	26	3	24	—	19	6	30	11	25	5	21	2
July	26	7	21	4	21	7	29	2	22	9	21	5
August	26	2	23	2	19	11	29	7	23	7	21	5
September.....	26	3	27	6	17	9	28	11	27	—	19	7
<i>Third quarter</i> ...	26	4	24	—	19	9	29	3	24	5	20	10
October	27	7	29	4	18	0	28	2	27	9	17	10
November	27	3	29	1	18	2	28	1	26	10	17	10
December	26	8	28	11	18	1	26	3	24	9	16	10
<i>Fourth quarter</i>	27	2	29	1	18	1	27	6	26	5	17	6
THE YEAR	26	4	25	7	18	9	30	4	26	2	19	11

REVENUE OF THE UNITED KINGDOM.

Net Produce in QUARTERS and YEARS ended 31st DEC., 1893-92-91-90.

[000's omitted.]

QUARTERS, ended 31st Dec.	1893.	1892.	1893.		Corresponding Quarters.	
			Less.	More.	1891.	1890.
	£	£	£	£	£	£
Customs	5,518,*	5,647,*	129,	—	5,497,*	5,422,
Excise	7,200,*	7,350,*	150,	—	7,342,*	7,120,
Stamps	3,160,*	3,480,*	320,	—	3,200,*	3,360,
Taxes	30,	35,	5,	—	25,	30,
Post Office	2,670,	2,630,	—	40,	2,560,	2,490,
Telegraph Service	620,	615,	—	5,	645,	615,
Property Tax	19,198,	19,757,	604,	45,	19,269,	19,037,
	1,240,	1,170,	—	70,	1,110,	1,180,
Crown Lands	20,438,	20,927,	604,	115,	20,379,	20,217,
	160,	160,	—	—	160,	160,
Interest on Advances	109,	110,	1,	—	111,	211,
Miscellaneous	501,	582,	81,	—	914,	656,
<i>Totals</i>	21,208,	21,779,	686,	115,	21,564,	21,244,
			NET DECR. £571,			

YEARS, ended 31st Dec.	1893.	1892.	1893.		Corresponding Years.	
			Less.	More.	1891.	1890.
	£	£	£	£	£	£
Customs	19,508,*	19,818,*	310,	—	19,587,*	19,816,
Excise	25,030,*	25,748,*	718,	—	24,710,*	25,335,
Stamps	12,730,*	14,090,*	1,360,	—	12,885,*	13,580,
Taxes	2,433,	2,449,	16,	—	2,420,	2,975,
Post Office	10,470,	10,300,	—	170,	10,030,	9,670,
Telegraph Service	2,510,	2,495,	—	15,	2,450,	2,425,
Property Tax	72,681,	74,900,	2,404,	185,	72,082,	73,801,
	13,640,	13,575,	—	65,	13,325,	12,870,
Crown Lands	86,321,	88,475,	2,404,	250,	85,407,	86,671,
	430,	430,	—	—	430,	430,
Interest on Advances	219,	220,	1,	—	222,	348,
Miscellaneous	1,583,	2,171,	588,	—	2,893,	3,079,
<i>Totals</i>	88,553,	91,296,	2,993,	250,	88,952,	90,528,
			NET DECR. £2,743,			

* Exclusive of transfers to local taxation account.

BANK OF ENGLAND.

Pursuant to the Act 7th and 8th Victoria, cap. 32 (1844)

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES. (Wednesdays.)	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Notes Issued.		Government Debt.	Other Securities.	Gold Coin and Bullion.		
£	1893.	£	£	£	£	Per cent. (End of 1892) 3
Mlns.		Mlns.	Mlns.	Mlns.	Mlns.	
39,50	Jan. 4	11,02	5,43	23,05	25,89	
39,82	" 11	11,02	5,43	23,37	25,63	
40,85	" 18	11,02	5,43	23,90	25,39	
40,79	" 25	11,02	5,43	24,34	24,87	25 Jan. 2½
41,05	Feb. 1	11,02	5,43	24,60	25,38	
41,36	" 8	11,02	5,43	24,91	25,04	
41,60	" 15	11,02	5,43	25,15	24,78	
41,95	" 22	11,02	5,43	25,50	24,51	
41,78	Mar. 1	11,02	5,43	25,33	24,86	
41,75	" 8	11,02	5,43	25,30	24,57	
41,78	" 15	11,02	5,43	25,33	24,50	
41,65	" 22	11,02	5,43	25,20	24,44	
40,95	" 29	11,02	5,43	24,50	25,56	
40,26	April 5	11,02	5,43	23,81	25,69	
40,18	" 12	11,02	5,43	23,73	25,47	
40,22	" 19	11,02	5,43	23,77	25,35	
40,04	" 26	11,02	5,43	23,59	25,61	
39,47	May 3	11,02	5,43	23,02	26,15	3 May 3
38,73	" 10	11,02	5,43	22,28	26,34	10 " 3½
38,19	" 17	11,02	5,43	21,74	26,59	
38,74	" 24	11,02	5,43	22,29	26,72	24 " 4
40,78	" 31	11,02	5,43	24,33	26,91	
42,13	June 7	11,02	5,43	25,68	26,54	7 June 3
44,00	" 14	11,02	5,43	27,55	26,25	14 " 2½
44,26	" 21	11,02	5,43	27,81	26,14	
44,73	" 28	11,02	5,43	28,28	26,56	
44,40	July 5	11,02	5,43	27,95	27,49	
44,80	" 12	11,02	5,43	27,85	26,92	
44,19	" 19	11,02	5,43	27,74	26,70	
44,25	" 26	11,02	5,43	27,80	26,83	
42,26	Aug. 2	11,02	5,43	25,81	27,16	2 Aug. 3
39,84	" 9	11,02	5,43	23,39	27,07	9 " 4
40,08	" 16	11,02	5,43	23,63	26,64	
39,46	" 23	11,02	5,43	23,01	26,25	23 " 5
40,59	" 30	11,02	5,43	24,14	26,39	
40,90	Sept. 6	11,02	5,43	24,45	26,17	
41,49	" 13	11,02	5,43	25,04	25,75	13 Sept 4
41,96	" 20	11,02	5,43	25,51	25,50	20 " 3½
42,19	" 27	11,02	5,43	25,74	25,87	
41,81	Oct. 4	11,02	5,43	24,86	26,56	4 Oct. 3
40,98	" 11	11,02	5,43	24,53	26,41	
40,94	" 18	11,02	5,43	24,49	26,28	
40,94	" 25	11,02	5,43	24,49	26,05	
40,39	Nov. 1	11,02	5,43	23,94	26,30	
40,03	" 8	11,02	5,43	23,58	25,97	
39,91	" 15	11,02	5,43	23,46	25,71	
40,07	" 22	11,02	5,43	23,62	25,22	
40,18	" 29	11,02	5,43	23,73	25,46	
40,03	Dec. 6	11,02	5,43	23,68	25,32	
40,21	" 13	11,02	5,43	23,76	25,11	
39,59	" 20	11,02	5,43	23,14	25,30	
38,96	" 27	11,02	5,43	22,51	25,46	

—WEEKLY RETURN.

for Wednesday in each Week, during the Year 1893.

[0,000's omitted.]

8	9	10	11	12	13	14	15	16	17	18
BANKING DEPARTMENT.										
Liabilities.					DATES. (Wednesdys.)	Assets.				Totals of Liabili- ties and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.			Govern- ment.	Other.	Notes.	Gold and Silver Coin.	
£	£	£	£	£	1893.	£	£	£	£	£
Mlns.	Mlns.	Mlns.	Mlns.	Mlns.		Mlns.	Mlns.	Mlns.	Mlns.	Mlns.
14.55	3.24	8.18	34.02	,19	Jan. 4	15.06	30.19	13.61	1.32	60.18
14.55	3.35	4.78	32.03	,19	" 11	14.06	25.29	14.19	1.37	54.90
14.55	3.37	5.13	32.12	,18	" 18	13.36	25.57	14.96	1.47	55.36
14.55	3.38	5.35	31.25	,19	" 25	12.06	25.31	15.92	1.44	54.73
14.55	3.42	4.93	30.09	,24	Feb. 1	11.26	24.88	15.67	1.42	53.23
14.55	3.42	6.55	29.05	,23	" 8	11.23	24.66	16.32	1.60	53.81
14.55	3.44	6.82	29.03	,21	" 15	11.23	24.37	16.82	1.64	54.06
14.55	3.50	8.27	28.91	,19	" 22	11.23	25.02	17.44	1.74	55.43
14.55	3.70	8.75	28.27	,17	Mar. 1	11.22	25.60	16.92	1.71	55.44
14.55	3.70	9.06	27.26	,20	" 8	11.22	24.63	17.18	1.75	54.78
14.55	3.71	9.47	27.72	,18	" 15	10.91	25.58	17.28	1.85	55.63
14.55	3.73	10.92	27.25	,15	" 22	11.21	26.32	17.21	1.87	56.61
14.55	3.73	10.44	28.93	,16	" 29	11.21	29.48	15.39	1.73	57.81
14.55	3.13	7.08	29.54	,17	April 5	11.21	27.02	14.57	1.68	54.48
14.55	3.10	5.93	29.23	,17	" 12	11.21	25.17	14.71	1.90	52.99
14.55	3.11	5.82	28.63	,17	" 19	11.21	24.30	14.87	1.90	52.28
14.55	3.12	5.24	29.78	,16	" 26	11.21	25.50	14.43	1.72	52.86
14.55	3.12	5.21	30.86	,21	May 3	11.21	27.74	13.32	1.69	53.96
14.55	3.13	5.88	29.74	,18	" 10	11.21	28.17	12.39	1.73	53.50
14.55	3.15	6.84	29.90	,18	" 17	11.21	30.09	11.60	1.72	54.62
14.55	3.15	7.02	29.21	,17	" 24	11.21	29.11	12.02	1.77	54.11
14.55	3.10	7.20	30.31	,16	" 31	11.21	28.47	13.87	1.77	55.32
14.55	3.12	7.06	30.09	,22	June 7	11.21	26.44	15.59	1.82	55.05
14.55	3.13	7.45	31.72	,19	" 14	11.21	26.23	17.75	1.84	57.04
14.55	3.14	7.27	32.25	,18	" 21	11.21	26.28	18.12	1.79	57.40
14.55	3.14	7.38	32.16	,18	" 28	11.21	26.20	18.17	1.83	57.41
14.55	3.35	5.88	36.94	,23	July 5	13.21	29.04	16.91	1.80	60.96
14.55	3.36	5.49	34.43	,22	" 12	13.71	25.23	17.38	1.73	58.05
14.55	3.38	5.00	35.04	,15	" 19	13.71	25.14	17.49	1.79	58.13
14.55	3.39	4.69	34.87	,16	" 26	13.51	24.95	17.42	1.78	57.66
14.55	3.43	4.16	32.11	,20	Aug. 2	13.11	24.52	15.10	1.72	54.45
14.55	3.44	3.70	30.10	,19	" 9	13.10	24.26	12.77	1.85	51.98
14.55	3.46	3.77	30.48	,17	" 16	13.10	24.26	13.44	1.63	52.43
14.55	3.48	4.36	28.84	,19	" 23	12.41	23.99	13.21	1.81	51.42
14.55	3.47	4.07	29.04	,17	" 30	12.13	23.11	14.20	1.86	51.31
14.55	3.76	3.32	28.75	,20	Sept. 6	9.99	24.04	14.73	1.82	50.58
14.55	3.77	3.34	29.93	,19	" 13	9.89	24.30	15.74	1.85	51.78
14.55	3.79	4.11	29.79	,16	" 20	9.59	24.49	16.46	1.86	52.41
14.55	3.80	4.26	29.06	,15	" 27	9.49	24.18	16.32	1.82	51.81
14.55	3.12	6.53	29.87	,18	Oct. 4	12.89	24.72	14.75	1.90	54.26
14.55	3.14	3.59	32.31	,20	" 11	12.89	24.42	14.57	1.92	53.80
14.55	3.15	4.34	32.09	,16	" 18	12.69	24.96	14.66	1.99	54.29
14.55	3.16	4.53	31.54	,15	" 25	12.29	24.66	14.89	2.07	53.92
14.55	3.16	4.34	31.39	,17	Nov. 1	12.09	25.39	14.09	2.03	53.61
14.55	3.17	4.04	30.67	,17	" 8	11.69	24.85	14.06	2.02	52.61
14.55	3.18	4.00	29.42	,16	" 15	11.29	23.76	14.20	2.06	51.32
14.55	3.20	3.99	28.79	,16	" 22	9.89	23.67	14.85	2.28	50.69
14.55	3.14	4.19	29.09	,14	" 29	9.69	24.46	14.72	2.26	51.13
14.55	3.16	3.79	28.03	,17	Dec. 6	9.29	23.61	14.71	2.09	49.70
14.55	3.16	3.90	28.39	,16	" 13	9.09	23.88	15.10	2.09	50.16
14.55	3.17	4.32	27.70	,15	" 20	8.89	24.86	14.29	1.86	49.90
14.55	3.19	4.48	29.28	,13	" 27	8.89	27.27	13.50	1.98	51.64

FOREIGN EXCHANGES.—*Quotations as under, LONDON on Paris, Hamburg, and Calcutta;—and New York, Calcutta, and Hong Kong, on LONDON, for 1893.*

1	2	3	4		5	6	7	8		9
DATES. (Thursdays)	London on Paris. 3 m. d.	London on Hamburg. 3 m. d.	Calcutta.		Indian Council Bills. Minimum Price per Rupee.	New York on London. 60 d. s.	Hong Kong on London. 4 m. d.	Price per Ounce.		
			London on Calcutta.					Gold Bars (Fine).		Standard Silver in Bars.
1893.			s. d.		d.	Per cent.	s. d.	s. d.		d.
Jan. 5	25·28 $\frac{3}{4}$	20·51	1 2 $\frac{5}{8}$		14 $\frac{5}{8}$	4·85 $\frac{1}{4}$	2 9 $\frac{1}{8}$	77 9 $\frac{3}{4}$		38 $\frac{1}{8}$
„ 19	25·28 $\frac{3}{4}$	20·48	1 2 $\frac{5}{8}$		14 $\frac{2}{3}$ $\frac{3}{2}$	4·86 $\frac{1}{4}$	2 8 $\frac{3}{4}$	77 11		38 $\frac{1}{4}$
Feb. 2	25·27 $\frac{1}{2}$	20·50	1 2 $\frac{1}{10}$		14 $\frac{2}{3}$ $\frac{3}{2}$	4·87	2 9	78 —		38 $\frac{7}{10}$
„ 16	25·30	20·52	1 2 $\frac{1}{10}$		14 $\frac{2}{3}$ $\frac{3}{2}$	4·86 $\frac{5}{8}$	2 9	78 —		38 $\frac{5}{10}$
Mar. 2	25·32 $\frac{1}{2}$	20·54	1 2 $\frac{1}{10}$		14 $\frac{1}{10}$	4·85 $\frac{5}{8}$	2 9	77 9 $\frac{1}{2}$		38 $\frac{3}{8}$
„ 16	25·31 $\frac{1}{4}$	20·55	1 2 $\frac{5}{8}$		14 $\frac{5}{8}$	4·84 $\frac{3}{8}$	2 8 $\frac{3}{4}$	77 10 $\frac{3}{4}$		38 $\frac{1}{4}$
„ 30	25·30	20·55	1 2 $\frac{5}{8}$		14 $\frac{5}{8}$	4·86	2 8 $\frac{5}{8}$	77 10		38 $\frac{5}{8}$
Apl. 13	25·30	20·55	1 2 $\frac{1}{2}$		14 $\frac{5}{8}$	4·86 $\frac{5}{8}$	2 8 $\frac{5}{8}$	77 10 $\frac{3}{4}$		38
„ 27	25·30	20·57	1 2 $\frac{1}{2}$		14 $\frac{2}{3}$ $\frac{1}{2}$	4·88	2 9	77 9 $\frac{1}{2}$		38
May 11	25·41 $\frac{1}{4}$	20·66	1 2 $\frac{1}{10}$		14 $\frac{2}{3}$ $\frac{3}{2}$	4·85	2 8 $\frac{3}{4}$	77 9		38 $\frac{1}{2}$
„ 25	25·48 $\frac{3}{4}$	20·72	1 2 $\frac{9}{10}$		14 $\frac{5}{8}$	4·85 $\frac{3}{8}$	2 8 $\frac{3}{4}$	77 9		37 $\frac{7}{8}$
June 8	25·37 $\frac{1}{2}$	20·60	1 2 $\frac{1}{2}$		14 $\frac{7}{8}$	4·85 $\frac{5}{8}$	2 8 $\frac{3}{8}$	77 9		37 $\frac{5}{10}$
„ 22	25·35	20·59	1 2 $\frac{1}{10}$		14 $\frac{2}{3}$ $\frac{9}{2}$	4·83 $\frac{3}{4}$	2 8 $\frac{1}{2}$	77 9 $\frac{1}{4}$		38 $\frac{1}{2}$
July 6	25·32 $\frac{1}{2}$	20·58	1 3 $\frac{1}{10}$		15 $\frac{7}{8}$	4·85 $\frac{1}{2}$	2 6 $\frac{1}{2}$	77 9		34 $\frac{1}{4}$
„ 20	25·35	20·59	1 3 $\frac{5}{8}$		—	4·81 $\frac{5}{8}$	2 6 $\frac{1}{2}$	77 9 $\frac{1}{4}$		33 $\frac{1}{2}$
Aug. 3	25·42 $\frac{1}{2}$	20·64	1 3 $\frac{7}{10}$		—	4·80 $\frac{1}{2}$	2 6 $\frac{1}{4}$	77 11 $\frac{1}{4}$		32 $\frac{1}{10}$
„ 17	25·50	20·70	1 3 $\frac{5}{10}$		—	4·82	2 5 $\frac{5}{8}$	77 11 $\frac{1}{2}$		33 $\frac{1}{2}$
„ 31	25·50	20·69	1 2 $\frac{7}{8}$		—	4·81 $\frac{1}{2}$	2 6	77 9		34
Sept. 14	25·49 $\frac{3}{4}$	20·67	1 3 $\frac{1}{10}$		15 $\frac{1}{4}$	4·82	2 5 $\frac{7}{8}$	77 9		34 $\frac{1}{2}$
„ 28	25·35	20·62	1 3 $\frac{1}{10}$		—	4·87	2 5 $\frac{7}{8}$	77 10 $\frac{1}{2}$		34 $\frac{1}{8}$
Oct. 12	25·36 $\frac{1}{4}$	20·60	1 3		—	4·82 $\frac{3}{4}$	2 5 $\frac{5}{8}$	77 11		33 $\frac{15}{10}$
„ 26	25·35	20·59	1 3 $\frac{1}{10}$		—	4·81 $\frac{1}{4}$	2 5 $\frac{5}{8}$	77 11 $\frac{1}{2}$		33 $\frac{15}{10}$
Nov. 9	25·33 $\frac{3}{4}$	20·60	1 3 $\frac{1}{8}$		15 $\frac{1}{4}$	4·81 $\frac{3}{4}$	2 4 $\frac{5}{8}$	77 11 $\frac{1}{2}$		32 $\frac{9}{10}$
„ 23	25·32 $\frac{1}{4}$	20·58	1 3 $\frac{3}{10}$		15 $\frac{1}{4}$	4·83 $\frac{1}{2}$	2 4 $\frac{3}{4}$	78 —		32 $\frac{1}{4}$
Dec. 7	25·33 $\frac{3}{4}$	20·58	1 3 $\frac{3}{10}$		15 $\frac{1}{4}$	4·84 $\frac{3}{4}$	2 4 $\frac{3}{8}$	77 11 $\frac{3}{4}$		31 $\frac{5}{10}$
„ 21	25·36 $\frac{1}{4}$	20·60	1 3		—	4·85	2 4	77 11 $\frac{1}{2}$		32 $\frac{1}{4}$
„ 28	25·37 $\frac{1}{2}$	20·60	1 3		15 $\frac{1}{4}$	4·84	2 3 $\frac{1}{2}$	77 11 $\frac{1}{2}$		31 $\frac{3}{4}$

JOURNAL
OF THE ROYAL STATISTICAL SOCIETY,

JUNE, 1894.

STATISTICS of PAUPERISM in OLD AGE.

By CHARLES BOOTH, ESQ.

[Abstract of a Paper read before the Royal Statistical Society, 20th March, 1894.
SIR RAWSON W. RAWSON, K.C.M.G., C.B., Hon. Vice-President, in the Chair.]

THE object I have had in view is to obtain and put together such information as official figures afford of the amount and character of pauperism in old age and its relief under the Poor Law. These figures are very complicated and involved, and it is not till all have been stated that their full bearing can be understood.

I find first that the numbers of the old in proportion to population vary enormously: in extreme cases, as five to one, and even in the large divisions into which my analysis divides the population, as much as two to one. On the other hand, I do not find that the proportion of these old people who seek relief is much greater where there are many than where there are few of them. Their numbers on the whole vary inversely as the density of the population. If it were not so, if towns ceased to attract and absorb the young and active, and the proportion of the old in them became normal, the consequences would be very serious. Life for old people is easier in the country, rents are lower, continued earnings more possible, friendly assistance in case of need more sure, and out relief very readily finds its place in the budgets of the poor. In the towns life indeed is shorter, but for those who survive it is much harder in their old age, and where charity intervenes it too often demoralises. The part played in the country by neighbourly knowledge must in towns be supplied by elaborate organisation of charity, very apt to err on this side or that—to sympathise too readily or distrust too suspiciously; and out relief being almost swallowed up in rent, is palpably uneconomical.

These things being so, it is not surprising that we find the proportion of out relief given varying, like the numbers of the old, inversely as the density of the population. In London 12 per

cent. of the old are so relieved, in rural places 24 per cent.,¹ and it would be unreasonable to condemn out relief as out relief without considering all the circumstances under which it is given.

In proportion as the amount of out relief increases, so the amount of in-door relief decreases. In provincial urban unions $11\frac{1}{2}$ per cent. of the old are relieved in-doors—in rural unions only 4 or $4\frac{1}{2}$ per cent., and the scale is gradual from one to the other according to density of population, with the exception, which runs all through the figures, that the wholly rural unions are less marked examples of these common conditions of rurality than those unions of which the population is not entirely sparse. London unions carry this sequence further again. In them, on the whole, no less than $22\frac{1}{2}$ per cent. of the old receive in-door relief; but London is very peculiar, and is considered separately in comparison with the other great centres of population.

The reasons for the excess of urban in-door relief are the same, only reversed. Earnings are less constant, charitable assistance more spasmodic, sickness more pressing; and finally those who have no hope or refuge but the poor house are more often found in urban life. It is but a choice of methods; where the one plan is inapplicable, the other must be adopted, for the need is equal. We have no means of dividing the in-door cases into permanent and temporary, but it is probable that both are far more common among the old in town than in country.

Medical relief without food is always most common where other forms of out relief are least given. At the highest $3\frac{1}{2}$, at the lowest $1\frac{1}{2}$ per cent. of the old people are relieved in this way in the urban and rural divisions. These have medicine in their own homes, or the doctor visits them. In widespread country unions this is not so easily done, and moreover the old people who need such care probably receive food too, if not a regular allowance from the parish.

Adding together these different forms of relief, it seems that the aged poor who seek parish assistance in the course of a year amount to nearly 30 per cent. of the old. The proportion is greatest in London, where the figure is no less than 38 per cent., and least in those urban unions which have a small rural element, where it is only 25 per cent. These districts have neither urban nor rural poverty; their proportion of old people is not very large,

¹ In these figures that portion of out relief which consists only in the doctor's visit or medicine supplied has not been counted. Such temporary assistance has nothing in common with a regular weekly allowance of money or food from the parish, and if we were able to take away also the cases of illness in which a little food was given by the doctor's orders, the divergence between town and country in respect to regular out-door relief would be still more marked.

and is partly made up of retired persons living on their savings; nevertheless, here, under the very best conditions, one-fourth of all the old seek parish relief. Otherwise, whether the unions be urban or rural, at least 30 per cent. of the old come upon the rates, excepting that the percentage is reduced to 28 in those unions which contain equal proportions of urban and rural.

If instead of divisions according to density of population we take up the geographical groups, we find that in the North things are better than elsewhere; but even there nearly one-fourth of all the old are relieved. In the East the proportion is very nearly one-third, and elsewhere (not counting London) the rate is constant at 29 to 30 per cent. Or if we take industrial divisions, we find (this time by sample) that the rate nowhere falls below $28\frac{1}{2}$ per cent. It is solely in residential districts that we touch a lower level, and even in these $22\frac{1}{2}$ per cent. of the old are paupers.

Only by redivision of the geographical groups according to industry can a lower percentage be found. Thus in the agricultural districts of the North only $15\frac{1}{2}$ per cent., and in the residential districts of the West only $14\frac{1}{2}$ per cent. are relieved. Other groups pay for this by proportionately higher rates. The smaller East coast ports show no less than $38\frac{1}{2}$ per cent., and those on the West coast 34 per cent. Agriculture in the East shows 34 per cent., manufacture in the West $33\frac{1}{2}$, and so on.

In the industrial selections London and the large towns are not included. A comparison between London and the other great centres of population, viz., the Tyne, Leeds, Manchester (and Salford), Liverpool (and Birkenhead), Birmingham, Bristol, shows again in favour of the North. Newcastle and Gateshead give relief to only $20\frac{1}{2}$ per cent. of their old. Leeds comes next with $27\frac{1}{2}$ per cent., and the others all stand at 28 or 29 per cent., leaving London pre-eminent with her 38 per cent.

If increasing are compared with decreasing populations, we find first, as might be expected, that where the total numbers decrease the old are most numerous, and, except in quite rural districts, most pauperised also. The extent to which this is so is very strongly marked. In London the selected areas of decreasing population have half their old people in receipt of relief, while the increasing areas have little more than one-fourth. In the provincial towns also the decreasing areas relieve 50 per cent. of their old, while the areas of increasing population relieve less than 25 per cent. In the mixed unions the difference is less noticeable, those which are mostly rural showing little difference between increasing and decreasing populations, and finally in the wholly rural unions we find the opposite—that is, a larger propor-

tion of the old in receipt of relief in unions which have increasing populations. For urban districts loss of population is a certain proof of poverty, and its gain a sure test of prosperity; but with rural districts neither proposition is true; if population dwindles, the land supports the smaller number in greater comfort; if the young go, there is more work for the old. On the other hand, increase of population in such districts, when it happens in England, does not spring from agricultural activity, but from the growth of small urban communities here and there, which it seems are liable to bring in their train some aggregation of poverty.

So far, we have found nothing which suggests the influence of administration on pauperism, but a good deal to show the influence of pauperism on administration; or more accurately, the influence of the different shapes which pauperism assumes, due to the presence of many old people, to density of population, to geographical or industrial characteristics, and to prosperity or the reverse as connected with increase or decrease of population.

The attempt I have made to complete my task by a direct analysis of the effect of different policies of administration is, I am aware, very imperfect, and to be looked at rather as a suggestion of what could be done than as in itself conclusive. The results shown are not altogether such as might be expected.

It is found in practice that there are several fairly defined lines of policy in poor law administration, corresponding in great measure to the readiness to give out relief. They may be stated as follows:—

- A. Out relief given, subject to good behaviour, not only in cases of actual destitution, but with the view of assisting the old who are in a state of poverty.
- B. Out relief given subject to (1) good character, (2) actual destitution, and (3) contributions from relatives legally liable; but without pressure on other relatives, and without entering into the question of adequate maintenance being assured.
- C. Out relief given subject to—
 - (1.) Good character.
 - (2.) Actual destitution.
 - (3.) Full contribution from relatives legally liable.
 - (4.) Fair contribution from relatives not legally liable.
 - (5.) Proof that adequate maintenance is secured.
- D. Practical refusal of out relief.

In many unions there is a mixture of these rules; in some the rules are irregularly observed, and others do not profess to have any rule, but deal with each case as at the time seems best.

Information has been obtained from 285 $\frac{1}{2}$ out of 648 unions; the remaining 363 made no reply, or none of which any use could be made. The chairman of each board was asked to state to which of the above policies that pursued by his board approached most nearly, or to describe in his own words the policy or practice of the board. Many of the replies received were very full and of great interest, and on the whole it has been possible to make the following classification, in which it will be seen that the symbol AB has been used to represent policies which lie between A and B, and BC, those which in some ways combine B and C:—

Class A	23 unions with	1,282,893 population.	
„ AB	96	4,564,760	„
„ B	105	4,114,097	„
„ BC	28	1,266,850	„
„ C	25	3,078,284	„
„ D	8	320,844	„
Not classed	347	14,372,886	„
<hr/>			
Total	632	29,000,614	„

The classified unions have a little less out-door and a little more in-door relief than the unclassified, but on the whole the proportion of old paupers in both sections is the same as it is for the whole population, viz., 29 $\frac{1}{2}$ per cent. We may therefore accept the results from the 285 $\frac{1}{2}$ classified unions as fairly representative of the whole.

The figures for London are too peculiar to be brought into average with the rest, and are separately considered. For the remainder of the country the success of D, the policy which practically refuses out relief, is most marked; but it must be said that there are no examples of this policy from the large provincial towns, and that the three London unions conducted on this principle have actually the largest percentage of old-age pauperism. Moreover, there are only five specimens in all, out of London.

Passing to other policies we find, to my surprise, the lowest percentage (24 $\frac{1}{2}$ per cent.) of old paupers in the 28 unions with policy marked BC—that is, a policy which, while frankly accepting out relief, grants it under some restrictions; and we find the highest percentage in the 25 unions of policy C, where out relief, though not refused, is fenced in with the strictest rules. Comparing the two, we find that C gives less out relief in the proportion of 12 to 16 $\frac{1}{2}$, but more in-door relief in the proportion of 17 $\frac{1}{2}$ to 6. It is in populous places that BC is most successful and that C is apparently most unsuccessful.

After BC, and this also is surprising, the lowest percentage (26) is to be found, where under policy A, out relief is the

accepted theory of dealing not only with destitution but with poverty. Again, as with BC, the results are best in populous places, a fact to be accounted for most likely by private charity supplementing the action of the poor law.

Finally, what is most remarkable in the showing of the classification according to policy is that under A, which most freely accepts the out-door plan, there is a smaller proportion of old people relieved in this way than under AB, and that the percentage again rises with policy B, in which out relief is on principle restricted to cases of destitution.

It may, however, be said by some, that whatever the policy may be which reduces out relief, it is the right policy. The selection of 10 unions in each urban or rural group which show a maximum, and 10 which show a minimum proportion of out relief in old age, has been made in order to follow up this view.

From a study of these selections we observe first that out relief on the whole prevails where there are most old people. The rule is not universal. In London it is not so, nor in the quite rural unions, but elsewhere it is very marked.

The proportion of the old in receipt of relief is on the whole less, but not very much less, in the unions where least out relief is given, the figures being respectively 29 and 32 per cent. Again, however, the metropolis throws the average out. In London the unions with maximum out relief have actually fewer old persons receiving relief than the unions which give least out relief, the averages with and without London are as follows:—

Averages.	Maximum Out Relief.				Minimum Out Relief.			
	In-door.	Out-door, excluding Medical.	Medical only.	Total.	In-door.	Out-door, excluding Medical.	Medical only.	Total.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
With London....	8	23	1	32	17	9	3	29
Without „	3	28	1	32	12½	9½	2	24
London alone....	14	15	2	31	27	1	8	36

Thus in London while on the whole the unions with minimum out relief have less of it by 14 per cent. compared to those with a maximum proportion, this gain is almost exactly balanced by excess on the in-door list, and much more than balanced when we take medical relief into account.

Out of London on the other hand a gain of 18½ per cent. out-door is paid for by a loss of only 9½ in-door, and medical relief shows but little difference.

Outside the metropolis therefore the policy is certainly suc-

cessful in reducing pauperism, and, if we omit the provincial urban section, where an advantage of 18 per cent. in the out-door list is nearly balanced by an excess of $16\frac{1}{2}$ per cent. in-door, we get for the more or less rural districts figures which are pretty strong—an excess on the in-door list of from $3\frac{1}{2}$ to 5 per cent. being set off against an advantage of from 20 to $12\frac{1}{2}$ per cent. out-door. It must however be admitted that some increased proportion of in-door relief does accompany the decrease of out-door relief in every section.

The results of this selection may perhaps be slightly misleading. The unions which have practically refused out relief are very few in number—far fewer than the unions selected to indicate the results of this policy. This is unfair to them; but on the other hand the work done in them has been so exceptional in character, and seems so little likely ever to be anything but exceptional, that for our purpose the comparison might be better made without them, and if so (outside of London) the net balance in favour of the restriction of out relief would be greatly reduced.

Finally, I have compared the amount of existing old age pauperism with the volume and rate of decrease of general pauperism in various groups. The result is to show that very little connection exists, and we cannot assume that the undoubted and satisfactory improvement which has taken place in pauperism generally has any application to the condition of the old.

To sum up, the official figures show beyond dispute that nearly one-third of the old in England and Wales receive parish relief; that this proportion falls to one-fourth or rises to one-half, according to the degree of prosperity enjoyed; but that below one-fourth the proportion scarcely falls in any representative group of unions; and, in individual cases, that the unions whose old people are mostly independent of the rates, are counterbalanced by those whose poverty is such that almost all the old are paupers.

[The following are the figures:—

Paupers per 1,000 Population at each Age. Twelve Months' Count.

Ages.	In.			Out.			Medical only.			Total.		
	Male.	Fe- male.	Com- bined.	Male.	Fe- male.	Com- bined.	Male.	Fe- male.	Com- bined.	Male.	Fe- male.	Com- bined.
Under 16.....	10	10	10	35	35	35	6	6	6	51	51	51
16—59.....	14	10	12	10	17	14	6	6	6	30	33	32
60—.....	78	42	59	31	87	61	13	10	12	122	139	132
65—.....	92	48	68	72	169	125	11	13	13	175	230	206
70—.....	120	70	88	150	254	208	18	17	17	288	341	313
75—.....	136	71	99	224	307	271	26	23	24	386	401	394
80—.....	136	81	103	245	293	273	41	33	37	422	407	413

I do not think that any words can add to, or detract much from, the force of these figures. There are no doubt qualifications, some of them of great importance, but all of them involving rather subtle considerations. With these I have already dealt in another place.² They do not, in my opinion, affect the main and simple conclusions to which these figures lead us. Below 60 years of age we have not the gradations, but it is probable that the rate from 20—25 would be under 1 per cent., and rise to 7 or 8 per cent. at 55—60. After 60 we find that 10 per cent.; after 65, 20 per cent.; after 70, 30 per cent.; and after 75 nearly 40 per cent. are relieved from the rates.]

Just as old age stands out plainly as the prevailing cause of pauperism after 65, and increasing age of increasing pauperism, so are general causes the evident explanation of the difference between the rate of old-age pauperism in one group of unions and another. With individual unions it may be otherwise, but, on the whole, people are poor because they are old, and poorer in some places than in others because the whole community there is less prosperous.

I hesitate to draw upon my material for details as to individual unions which show very exceptional results. It is always possible that some error in the figures, or some adjustment of boundaries affecting the relation of pauperism to population, may not have been noted; or the percentage of paupers to population may be affected by the fact that some parish institution for the old or young is beyond the geographical boundaries of the union. In so great a mass of figures there will certainly be some mistakes of one kind or another. I think however that, whatever they may be, they are not likely to affect materially any of the averages I have used.

CONCLUSION.

The questions considered briefly in this paper, and more fully in the book which I have lately published, are the same as those now under consideration by a Royal Commission of which I have the honour to be a member. My own inquiry was started before the appointment of the Old Age Commission, and has necessarily followed very different lines. I therefore do not hesitate to publish the results; that is to say, the bare facts disclosed. Beyond this I cannot go. Suggestions, whether of improved administration of the present law, or of any changes in that law, or on the direction of any substitutes for the forms of relief now given, must be based on the whole mass of evidence. It is therefore not possible for me to bring my inquiry to a conclusion as complete as I could wish until the Commission has reported.

² "Pauperism and the Endowment of Old Age." (Macmillan.)

I hope that the facts I have collected will be found of value in filling up interstices in the larger web which will be provided by the evidence laid before the Commission. These facts are to a great extent such as elude analysis and defy summary treatment. They affect the mind mainly by the insistence of accumulation and reiteration. I will, however, conclude by an attempt to state in a provisional way those which stand out most prominently.

The Census of 1891 counted 606,505 men and 765,917 women of 65 years of age and upwards in England and Wales. Of these no less than 359,202 men and 455,283 women lived in districts where from 20 per cent. to 35 per cent. of the old did receive parish relief to some extent in the year ending Lady Day, 1892. Of the remainder, 112,005 men and 144,233 women lived under better, and 135,298 men and 166,401 women under worse conditions. The lowest rate of pauperism in old age is 8 per cent., in the 2 unions of Castle Ward and Brixworth; the highest rate is 84 per cent., at St. Saviour's, Southwark, but the total number of aged persons in unions with less than 10 per cent. of old age pauperism was only 9,747. The number where the rate is over 50 per cent. is 71,702.

The whole number of those over 65 relieved in the twelve months was 401,904. Of these 114,144 had relief in-doors, and 287,760 out-doors, including in the latter 25,477 who are returned as having medical relief only.

The exact ages were not returned, but by collating the results of a previous return, a reasonable estimate can be made, and we can say without much doubt, that while only 5 per cent. of the population are paupers taking all ages together, and not half of that proportion taking the active years of life alone, the rate is about 10 per cent. between 60 and 65, 20 per cent. between 65 and 70, 30 per cent. between 70 and 75, and not much less than 40 per cent. over 75.

It is, moreover, certain that a considerable section—perhaps one-third—of the population is lifted so far above parish relief as to yield a very small percentage of pauperism in old age. It follows that the rate for the rest of the population will be far above the average 30 per cent. If such a division of classes could be made it would probably be found that amongst the working classes and small traders the rate of pauperism for all over 65 is not less than 40 to 45 per cent.

The very serious character of these statistics is evident, and fully justifies the public feeling on the matter which resulted in the appointment of the Royal Commission.

To the foregoing broad statement of the facts may be added by

way of elucidation the following further deductions from official figures:—

1. The proportion of persons over 65 is least in the towns and greatest in the country, varying inversely as the density of population.
2. The proportion of those of them receiving out-door as compared to in-door relief follows the same rule.
3. Small numbers relieved out of doors are connected with larger numbers relieved in-doors, and *vice versâ*.
4. The proportion of the old relieved is on the whole no more where assistance is principally given in the form of out-door relief, than where comparatively little is distributed in this particular manner.
5. The relation of the numbers relieved on one day to the numbers relieved in the twelve months varies with the proportion of out relief, such relief being more permanent in character.

6. The proportion of the old relieved is greatest in the Eastern counties—smallest in the North.

7. The proportion of the old relieved is greatest where population is decreasing—smallest where it is increasing.

8. The proportion of the old relieved in towns is greatest where population is most dense.

[NOTE.]—In 6, 7, and 8, greater comparative poverty is the underlying condition where most relief is given to the aged.

9. The proportion of the old relieved is small in all residential districts, and especially in suburban residential places.

[NOTE.]—In 9, wealth is the underlying condition. This is in part a corollary of 8; old persons with means retire to the suburbs from crowded districts in towns.

10. Varying policies of Poor Law administration are connected with varying conditions as to density of population, industrial character, or geographical position, and possibly with other causes.

11. However the unions be grouped, no policy stands out as on the average definitely superior to the others as regards the old.

12. It appears that each policy in turn is most successful according to the circumstances under which it is applied.

13. There are no statistics to show whether pauperism in old age has increased or decreased, but the figures of total pauperism show general improvement from 1881 to 1891 everywhere except in London.

14. The improvement shown in the decade is greatest in Wales and the West. Wales, on the whole, represents an out-

door, and the border counties an in-door policy. In both divisions the total rate of improvement is the same, thus suggesting that it is the result of causes other than policy of administration.

15. Increase, or relatively slow decrease, of pauperism seems to be very closely connected with decrease of population, and consequent increase of proportionate numbers of the old.

The above conclusions are drawn from groups large enough for the most part to eliminate individual peculiarities. Smaller groups chosen to emphasize in-door and out-door relief show that—

1. The extremes of either policy are mostly confined to certain districts, *e.g.*, “anti” out relief to Kent, Salop, and Berks; “free” out relief to Wales.
2. In the out relief unions there are more old people.
3. There are, taken altogether, fewer old people relieved where out relief is restricted (except in London), but the restriction is connected with considerably more in-door relief.
4. The success of a complete anti-out relief policy in country districts, when it has been fairly and fully tried, is most striking; but that there are inherent difficulties in the way of its application is shown by the very limited number of cases on record.

A comparison of individual unions under similar industrial conditions, and with little difference in density of population, shows that—

1. The variation in amount of general pauperism (not less than of old age pauperism) is extraordinary. In one group the maximum is no less than ten times the minimum, and in no large group is the proportion less than three times.
2. The proportion of relief given out of doors bears no general relation to the total percentage of pauperism.
3. It may be true that a large proportion of relief will be given out of doors where administration is lax.
4. It is not true that a large proportion of relief given out of doors implies lax administration.
5. Remarkable instances of successful administration are to be found with any proportion of out relief from over 80 to under 7 per cent.
6. It is difficult to apply any trustworthy test of poverty to explain the divergence in amount of pauperism.
7. The explanation of the differences shown is therefore still to be sought.

Such are the deductions to be drawn from the study and comparison of the official statistics.

DISCUSSION *on* MR. BOOTH'S PAPER.

SIR FRANCIS S. POWELL, M.P., was much struck with the circumstance that the north of England was in a more favourable condition, as regarded pauperism, than the country as a whole. It might be argued that elementary education, being more satisfactory in the north, led to less poverty; but on the other hand, it might fairly be maintained that the greater vigour and energy prevailing among the northern population, had both promoted education and produced such a condition that pauperism gave less cause for anxiety. The union of Settle had been particularly referred to as one of those where the rate of old age pauperism was lowest; in this case there were, he thought, several circumstances tending to diminish the pauperism; the climate was healthy (though humid), employment was varied in character, and sufficient for the wants of the inhabitants without inducing immigration; there was a great feeling of mutual sympathetic helpfulness in the district, and the population was only very slightly increasing.

It was very questionable whether the young and vigorous in England sufficiently helped the old; he had been informed that there was a marked contrast between the assistance rendered by a French family to the old grandfather or grandmother, and the too niggardly help too often given in similar cases in this country. Amongst the causes of the difference in the amount of pauperism in different districts, was the contrast in the disposition of those in a condition to afford assistance. The pauperising gift, he believed, was poison in itself, but friendly and sympathetic aid was a source of strength. He did not believe it possible to do away altogether with out-door relief; it had been tried in one or two cases, and the experiment had been strictly conterminous in point of time with the activity of a particular chairman. Speaking as a Yorkshire guardian, he considered that there must be some out relief, but that it should be kept as low as possible. Above all things, out relief, instead of being readily given at the first trial, should be withheld as long as possible. The first gift from the guardians was the most disastrous to the independence, not only of individuals, but sometimes of a large family connection. He had been struck with the increase of in-door paupers wherever there was less out relief: this showed that the workhouse had in many cases lost much of its terrorism. Workhouses were now often made so comfortable that the pauper was more inclined to receive the accommodation offered, which was much better than that of his own home. The case of the aged poor was another question altogether, and their large number was a great disgrace to this country. Enough had been shown, he thought, to prove how desirable it was that some system should be introduced under which these old people could pass the latter part of their (in most cases honourable and laborious) lives, without the degradation which always accompanies relief from the poor fund.

Mr. C. S. LOCH made various criticisms, mainly on the methods employed by Mr. Booth in his paper. On these in great measure would depend the validity of the conclusions. The division of unions according to their administration was very indefinite. In many unions it could hardly be said that there was any explicit policy. And an "A" or "B" policy combined with a "B" or "C" policy, seemed to create categories in which policies inconsistent one with another were lumped together. If out relief was given to the poor subject to good behaviour only, it could not also be given to the destitute and refused to the poor; it could not be given alike with pressure on relatives liable to contribute, and without pressure on such relatives. A composite policy so described neutralised itself; and the result of calculations on this basis must be as neutral as the policy. Further, unions of very different industrial and other conditions were classed together, and in the face of the extreme difference of some of these conditions, the effect of a difference in policy could not appear. Stepney, Whitechapel, and St. George-in-the-East, were in class "D" formed into one population with the rural districts of Brixworth and Bradfield. Of course the old age pauperism of St. George-in-the-East with its dwindling population must be high; but in the table this was neutralised by the low figures of the two rural unions. It was a question whether much more was gained by classifying, in accordance with such indefinite divisions, than by the use of the words "strict," "careful," &c.—the latter word being applied especially to such unions as Birmingham, Liverpool, Manchester, and others that adopted a "C" policy. It was said that "to ask often was "more demoralising than to receive continuously." But this was hardly a fair view. In reducing pauperism the change must be to a large extent from continuous or chronic dependence to casual and uncertain dependence. And the repeated applications were also in part due to changes in the method of administering medical relief. These changes led to many demands, and these demands were not limited to medical relief, but included general supplementary relief as well. With regard also to the enumeration of paupers by age, it must be remembered that this had not been tested. Nor had the extent to which, in some of the returns, especially where there was a large amount of casual out-door relief, overlapping might prevail. Mr. Ritchie's return was asked for in the middle of a year, and (as, for instance, a letter from the Clerk to the St. Saviour's Union showed) the verification of the identity of the applicants entered in the return was sometimes most difficult, if not impossible. Under different or slightly varying names, there might be only one applicant, whose identity as such was hardly discoverable. It was a question whether much more labour should not be expended on the verification of the preliminary facts on which statistical conclusions were based. In some instances, *e.g.*, in the "north" district, large urban centres, such as Liverpool, were combined with large rural districts, such as Westmorland. Was it possible that with such extreme variations of density of population in the same district, there could be any relation between the "persons per acre" in the whole of it, and

the number of old people to the population within it? Was not there in such instances a neglect of the specific conditions necessary to a true comparison? It would be noticed also how very even was the percentage of old people in receipt of relief alike in manufacturing, mining, agricultural, and purely agricultural districts. Was this to be taken to imply that, excepting in residential and shipping districts, the character of the industry (and, what follows, the difference in the wage) made very little difference in the amount of old age pauperism? This could hardly be so. Lancashire, a county of high wages, was an instance to the contrary. Thirty per cent. of those who were above 65 years of age were paupers. Great stress was laid upon this. But was it so surprising or disgraceful? After 65 the dependence of life was necessarily great. Take, for instance, the Hearts of Oak. In 1891 more than 72 per cent. of the numbers over 65 years of age were in receipt of sick benefit, and especially in an influenza year the number of the aged who needed relief from some quarter would be great. The old people who had made no club provision for themselves, and had no sufficient private means, must rely upon some one. Hitherto it had been taken for granted that they would rely on the parish or on charity. The problem of the reduction of able bodied pauperism had hitherto occupied the attention of those interested in these matters. Ten to fifteen years ago the pauperism of the aged was a new question. New means of provision were already being proposed; and the question to be fairly stated must be stated historically—a criticism that applied to much else in the paper. The large number of the poor who, under any circumstances, must receive infirmary relief in old age, must also be taken into account. In conclusion, the improvement of a decade was referred to. A decade was far too short a period for purposes of comparison in an investigation into the condition of the aged. It would appear that the careful “C” unions were more productive of pauperism than the less careful “B C” unions. If this held good, where there was discriminating out-door relief there was most pauperism. But a few large unions, such as Manchester and Liverpool, with an old low-class poor population, should make all the difference in the figures. The conclusion, however, was a paradox. It came to this: that the less adequate the relief, the less relations assisted, the less was the pauperism. While, on the one hand, “D”—prohibition—produced the best results, on the other hand these “C” unions, which nearest approached “D,” produced the worst results. Mr. Booth did not, Mr. Loch thought, claim more for his paper than that it was a contribution towards the analysis of the conditions and causes of pauperism. As such, especially in regard to the difference in the amount of old age pauperism in rural and urban districts, it would further the accomplishment of a task in which many were greatly interested. A further analysis, historical and industrial, would, he hoped, be produced.

Sir COURTENAY BOYLE could speak from his experience as a poor law inspector of the two districts in the kingdom where out

relief was most freely given as a principle. He had begun his career as an inspector in Wales, and finished in the eastern counties. The first observation he would make was that the state of the law had something to do with the statistics of pauperism; for instance, they would all remember that the Hardy Act had had considerable influence upon the pauperism of the metropolis. The fact that out-door relief was practically charged upon a smaller administrative area than in-door relief, certainly had its effect on the figures, and he was desirous of seeing whether the experiment could safely be tried elsewhere than in London. He believed that it would do away with the common and most mischievous argument that out-door relief was cheaper than in-door. Another consideration, alluded to by Sir Francis Powell, was the personal element in the administration of the poor law. The influence of a single man often lasted long after he was no longer on the Board; and he would point to the effect of the administration of the Atcham Union in Shropshire. No doubt the influence of the late Sir Baldwin Leighton had a great deal to do with the low amount of out-door pauperism to which Mr. Booth had referred as distinguishing the border counties of Wales. Aberayron in Wales, and Swaffham in Norfolk, had been alluded to as being the most highly pauperised. He (Sir Courtenay Boyle) had some acquaintance with both, and gave it as his own conviction that the personal element was a very important factor in those two unions.

Another fact which had not been alluded to was the condition of the workhouses. In many cases the whole system of in-door relief was well conducted, but there were also many unions where no one could visit the workhouse and come away without a feeling of utter despondency. He had seen such himself in the eastern counties, and had felt it hopeless to urge on the guardians of those unions that in-door relief should be the rule. In many cases improvements were all but impossible; the workhouse (which might date from long before the poor law reform of 1834) would have first to be razed to the ground, and a new one built. Statistics of those unions were undoubtedly affected by the condition of the workhouses; and the guardians, with the utmost desire to improve matters, simply did not see how the material at their command justified them in making the large outlay required. He quite agreed with Mr. Loch that the subject required even greater study than had been given to it. All sorts of conditions prevailed: varieties of employment, of individual characteristics, of law, and of administration. Out relief could not be diminished to any great extent, but there was danger in encouraging it. They must abide by the principles laid down by the framers of the first poor law report, and adhere to the guiding principle that the condition of the individual who was helped should be, on the whole, less eligible than the condition of the individual who contributed to that support, otherwise they would encourage that thriftlessness which they were so anxious to avoid. But it was especially the position of the old which was under consideration to-night, and this they were all especially desirous of alleviating. If the wisdom of economists could devise some means by which men and women

over 65 could be relieved from destitution without becoming paupers, they would have solved one of the most difficult problems of our time.

Dr. W. A. HUNTER, M.P., said that he could not agree with Sir Courtenay Boyle. He did not consider it a mischievous delusion to suppose that those unions which gave most out-door relief were the cheapest; it was not a delusion, but a simple fact. Neither did he share Mr. Loch's dislike of groups, for nothing was more fallacious than to argue from a single union. In St. George's-in-the-East, for instance, where there was professedly no out-relief, no less than 66 out of every 100 persons over 65 were relieved in one year. It was only by taking large groups of unions which had nothing in common, except the fact that they were in-door or out-door unions, that the precise effect of the two kinds of relief, as distinguished from the innumerable other causes, could be ascertained. The test usually applied in poor law statistics, by calculating the number of relieved per 1,000 of the population, was entirely fallacious. In such comparisons the number of paupers must be considered in reference, not to the whole population, but to that portion which is liable to require relief. London was the only place in England in which it was possible to classify the population approximately according to the number of the poor, and this was entirely due to the President's laborious investigations. The results of a comparison of pauperism, based on Mr. Booth's inquiry, would be found totally at variance with the results obtained by comparing the number of paupers with the population. It appeared a mere truism, but it was one generally overlooked, that the great cause of pauperism was poverty. In Scotland, where the poor law was practically identical with the English law, the poverty could be approximately measured, because he (Dr. Hunter) had last year obtained a return giving for each parish in Scotland the number of persons paying rents of different amounts. Some idea of the relative poverty of counties could then be obtained by considering how many people there were out of the total number of ratepayers whose rents were, say, under 4*l*. There was scarcely any difference in the administration of the poor law throughout Scotland; the principle was everywhere the same—never to give in-door relief if it could by any possibility be avoided. They had adopted exactly the opposite principle to the English Local Government Board, and considered that the poor house was the worst place to which anyone could be sent.

Few people, he thought, fully appreciated the effect of old age in augmenting pauperism, and he would therefore, by way of emphasising them, put Mr. Booth's figures in a somewhat different shape. Taking unity to represent the degree of pauperism between the ages of 16 and 60, when a person was presumably able to support himself, the pauperism between 60 and 65 would be represented by 6; that between 65 and 70 by 12; between 70 and 75 it was 21; between 75 and 80 it rose to 29; and after 80 the pauperism was 34 times the amount in the first quoted ages.

Nothing was more striking than the extraordinarily rapid increase of paupers with age, and the only conclusion to be drawn was that disability arising from age was the main cause of old age pauperism. Whether out-door or in-door relief prevailed, a broad line of distinction should be drawn at the age of 60 or 65. Before that age individuals could work for themselves, but afterwards it was obvious that the supposed disastrous consequences of out-door relief were not likely to ensue; and this distinction of age was, in his opinion, the sound principle on which any legislation ought to be based.

Rev. J. FROME WILKINSON, alluding to Mr. Booth's point that various unions might not always have sent in their returns or classified them according to their correct policy, said, that, in his own union in the Midlands, the question between A, B, and C had been discussed, and he himself had moved a resolution that they should return themselves as being as near as possible to a policy marked by one of those letters (B). But several of his fellow guardians thought that that policy would perhaps appear a little too lax in official eyes, and so the Board ultimately returned a policy (C), showing their out-door relief as smaller than it actually was. The paper proved very conclusively that there was less old age pauperism in the north than in the south and south-west. He had himself lived in the south-west, as well as in the Midlands and the north, and he was certain that it resolved itself into a question of poverty. In the north earnings were better, and old age was provided for in various ways, while in the south-west the wage was so small that the agricultural labourer could scarcely provide the necessaries of life, much less lay anything by for old age. He entirely agreed with the principle laid down in the First Report of the Poor Law Commissioners, that the condition of those relieved should be less eligible than that of the lowest class of unskilled labourers, but only in so far as it applied to the working period of life. After the age when neither skilled nor unskilled could earn full wages, he thought that they should be adequately provided for, without any reference to those workers who could earn their full pay.

Mr. G. H. PERRIS asked whether the figures did not refer to a single year, and, if so, whether that fact did not seriously affect a comparison of different districts, owing to the disturbing influence of local causes. In the year referred to influenza in particular was very rife, and its effects varied in different districts. There were also certain regular differences in the local incidence of disease and in the local provision for disease, and there were great local fluctuations of employment. All of these considerations might be expected to seriously affect the statistics of local pauperism.

Mr. BOOTH, replying first to Mr. Perris, said it was quite true that the figures referred to one year only; but it had been a tremendous piece of work for the officials to get even them, and had entailed a great effort on the part of the guardians, which would be a most serious thing if it were required annually. Similar information, in a less definite way, had been obtained on

the motion of Mr. Burt in 1889, with regard to the number of old people relieved in a single day, and he (Mr. Booth) had found the results to confirm those of Mr. Ritchie's return. With regard to what Sir Courtenay Boyle had said as to the danger of encouraging out-relief, he considered that the figures shook the *basis* of the official case, as it might be called, against out-relief, to a great extent; and, although the same conclusions might at the end be arrived at, the whole question required to be reconsidered on a much broader basis. He had tried to contribute some points towards that new basis. The experiment made in London of drawing the in-door relief from a broader area, making the common poor law fund pay a proportion of the in-door relief, while each union paid its own out-door relief, was very interesting; but had not proved an encouraging example to quote in favour of this plan, for there had been on the whole practically no decrease of metropolitan pauperism in the last few years, and in some London districts it had increased very much. Dr. Hunter's comparison with Scotland was a very interesting one, and went to show that, when administered in a hard-headed way, out-relief was by no means a failure. Out-relief in Scotland and an opposite policy in England had alike coincided with an excellent result in the reduction of pauperism, proving rather the general prosperity of both countries. A comparison between Wales and the bordering counties showed the same result. Under the influence of Sir Baldwin Leighton's theories and the example of Atcham, there had been a great reduction of out-relief and a slight increase of in-door relief in Shropshire, with a general improvement in the state of pauperism, but no less improvement was shown in Wales, where out-relief was given freely. Dr. Hunter had said that the amount of pauperism was a question of poverty; but the further question remained, why were some districts poorer than others? One portion of a great city might reasonably be poorer than another, but there seemed no sufficient reason why the pauperism of one union should be three, five, or even ten times the amount in another union of very similar character. Pauperism might depend on poverty, but that was not the root of the matter.

Mr. Loch had criticised the classification and the mixed classes of administration AB, BC, &c. But these mixtures had been made by the guardians themselves, who in some cases said their policy was, for instance, A, but that they accepted one or two points of B, and so he had been obliged to take the policy in such unions as mixed. It was no doubt illogical, but so was the administration. With regard to the conclusions from the selected unions of maximum and minimum out-door and in-door relief, he had been careful not to include London with the provinces. The descriptions "lax" and "strict" administration as commonly applied had been most mischievous, and had complicated matters immensely. From the broad figures which he had obtained he saw that success was, at any rate, coincident with a great variety of administrations. The result in any particular case was not due only to the policy pursued, was possibly not due to it at all; there were other causes involved. Above all things they must not use

any language which involved reflections, but give fair play to all the excellent efforts which were being made by many guardians throughout England.

The ages, it was true, had not been tested, but he did not suppose the returns in this respect were more incorrect than those of the census. Even if they were incorrect, the error would be broad and more or less uniform, and would not invalidate the comparisons. People, instead of being 65, might be only 62; but they were aged, and were recognized as such. There might be some desire to make themselves a little older than they really were; but they were tested more closely than for census purposes, because when a man came again and again he would not always tell the same story if it were false. The total percentage of pauperism in old age, instead of being 30 per cent., might perhaps be 27; but an error of that kind would not affect the various comparisons between one district and another.

He questioned the value of Mr. Loch's point as to chronic and casual pauperism. He believed that the chronic was the least objectionable, if by chronic was meant pauperism that was dealt with once for all. He did not think the refusal of out relief any very great step in advance. The effect of the greater amount of medical relief given was very noticeable in the towns; workhouses and infirmaries were approximating to public hospitals so as to materially affect the figures. But there were no official figures on the subject. They had the heading "medical only," referring to the visit of the parish doctor, but even these figures were uncertain; for anything that could be called food, ordered by the doctor, caused the case to be transferred from the "medical only" list to that of out relief. Mr. Loch had suggested that policy "C" had probably suffered under some special disadvantages in the way in which the figures were taken out. This was probably true, and they no doubt required more exhaustive investigation. The policy "C" was one which was growing considerably in large towns, Birmingham, for instance. It was also true that a careful historical investigation was necessary, but even then they would not be sure that the results shown were due to any particular policy.

With reference to the 72 per cent. of those over 65 in the Hearts of Oak, referred to by Mr. Loch as on the sick list, that was surely begging the question. They wanted to avoid the necessity of the old people coming on to the poor law for relief; if they came on the Hearts of Oak they came on their own money which they had subscribed during their whole life. If they could all subscribe during their life time to some such society, and not need to apply to the poor law, he would be perfectly satisfied. Finally, he had considered the reduction in pauperism only during the years 1881-91 because he could not get the full figures for an earlier period; besides which, the signs of general improvement during that period were sufficient, being so strong as to be unmistakable. As to the old, there were no figures of any kind from which to make a comparison between the present and the past.

A cordial vote of thanks to Mr. Booth brought the proceedings to a close.

CONDITIONS *and* PROSPECTS of POPULAR EDUCATION *in* INDIA.

By J. A. BAINES, ESQ., C.S.I.

[Read before the Royal Statistical Society, 17th April, 1894.
Dr. F. J. MOVAT, LL.D., Hon. Vice-President, in the Chair.]

LAST winter, in the course of an official flitting, I happened to come across a volume of the Society's Journal, which struck me as being remarkable from containing three papers, all of which bore directly on subjects of the highest interest, irrespective of their statistical aspect. The first was the correction of the English life table, by Mr. Noel Humphreys; the second and third treated of education, the one in India, the other in England and Wales. As I had received the honour of an invitation to address this Society in the course of the coming session, it occurred to me that I could not select a subject of more importance than either of the two thus connected with the country in which I have spent the chief portion of my working life, that is the life values of the population of India as compared with those of the west, and the conditions and prospects of education in our eastern empire. My reason for selecting the latter was simply that I hope the former will be treated in the course of time by a specialist, Mr. G. F. Hardy, a Fellow of this Society,¹ who, for the second time, has examined and sifted the available information, and drawn his own conclusions, which must, of course, carry more weight than those of an amateur in actuarial work, more particularly as I have recently noticed that the question of "selected lives" has already been raised in India by those interested in life assurance, and my own researches into the subject have been restricted to the vital statistics of the population at large.

The authors of the two papers on education were Mr. Rowland Hamilton and the Rev. James Johnston, and if comparisons between the two countries of which they treat were of any practical value, few would be more interesting than those that can be gleaned from the conclusions to be here found. But it is altogether outside the purpose of the present paper to draw such comparisons, and it is of India alone and independently that I wish to treat.

Now Mr. Johnston's paper was written avowedly in anticipation of the thorough examination of the condition of education in

¹ See the last section of vol. ii of the "Indian Census Returns for 1891."

India by a special commission, whose report has since, of course, been given to the world, and has been followed by two quinquennial reviews of the course of public instruction since the latest year with which the commission had to deal. It is not my object, however, to bring his paper up to date; to take up the thread, I mean, where he dropped it, and merely to follow up the lines on which he was treating the subject. In the first place Mr. Johnston must be held to be in some degree an expert on these questions, for the educational work of some of the Christian missions in India, especially in the province with which he seems to be best acquainted, is, I may be permitted to observe, amongst their greatest and most praiseworthy achievements, and in one particular direction their efforts have been so noteworthy that I shall have to refer to them in a later portion of this paper. Now, I do not pretend to stand before the Society in the character of an expert in matters pædagogic, but as my previous appearances here have been in connection with such very different subjects, I owe a few words in explanation of my venturing to trespass on somewhat technical ground. In the part of India where I have been chiefly employed in administrative work, it is the rule for what are known as the district officers, a comprehensive term which I fear I cannot spare space to explain here, to inspect all the primary schools that lie within their range during the annual tour in the rural tracts. The inspection is directed not so much to the proficiency of the pupils in their studies, which is tested by the departmental officers, as to the general condition of the institution in regard to such matters as attendance, punctuality in registration and writing up current records, provision of furniture, cleanliness of the school premises, and similar non-professional essentials. It is the custom, however, on such occasions to gratify the master and the local board of management, or the parents of the pupils, by a cursory parade of the different classes in the school, and to note down one's general impression or any special merits or defects that may have attracted attention. This then is the extent to which probably nearly every member of my profession is competent to judge of matters educational, and it obviously covers but one section, though that is the largest and most important, of the population under instruction. It is that in which the masses, amongst whom the bulk of our work lies, are chiefly interested, and it is that, again, which under the system in force in several of the provinces, serves as a feeder to the institutions of a higher grade, and where accordingly one finds in embryo the pupil who is met later in life in the court or offices of the district, or in even higher functions. I, personally, have had the further advantage of having been for a few months an educational

inspector, and though my experiences in that capacity give me no right to speak as an authority, they were sufficient to give me a certain insight into the system, and to enable me to read between the lines of the statistics, selections from which I have to present to you hereafter. Thus one reason for my diverging from the line of treatment adopted by my predecessor on this subject is that his view of education is based on different experience. Another is that one of the main objects of his paper seems to be not only to lay bare certain flagrant deficiencies in the matter of education in India, but to impute the blame of this shortcoming to the State and to the system it has established. Well, here I must altogether part company from him, as, whatever my personal views on the questions at issue may be, it is certainly beyond my province to criticise the action and policy of the Government under which I have still the honour of serving. Fortunately there is no subject which can be viewed from so many different standpoints as education. There is no subject on which more has been written, and which yet, as Mill has observed, still seems inexhaustible. There is no subject again which is more dependent than education upon conditions with which it appears at first sight to be but remotely connected. It is not my purpose, therefore, to regard my subject as one merely of statistics or departmental action. Neither of these can touch more than the very edge of it.

The numbers attending school or college, and studying in the different grades and faculties, and the relative proportion of expenditure from public and private funds respectively, together with the efficiency of the teaching, as tested by examinations, all these would be factors of the highest importance if we were concerned with public or popular instruction. But from the standpoint I desire to occupy they are conclusive only as regards one branch of the subject. That standpoint affords a survey of the education of the people as a whole. It regards not only the book learning, discipline, and moral precepts that are instilled or hammered into them at school, but the wider discipline and training assimilated in the course of daily life; the influences, physical and social, that tend to the formation of the character in the more important of the various moulds into which the different sections of the Indian community have been cast; the seed bed, in fact, in which the current educational system has been sown, or the stock on to which the novel circumstances of the last two generations have been grafted. The survey will be found, I hope, to be laid before you as impartially as the nature of the problem allows. If there be any bias, it is in the direction of the point of view of the administrator. Of one, that is, who recognises how much less is the friction of the wheels of the machine in the case of an

educated population, but who equally recognises from experience how weak must be a structure, educational or administrative, which is not based on the sentiment and the organic characteristics of the masses for whose benefit it is designed.

It is worth a word or two of comment that I have not only used the term education instead of instruction, but I have added the adjective popular in describing the subject of my address to you to-night. It is not, I will ask you to assume, without purpose that I have thus encumbered myself with additional verbiage. The circumstances of India present such an absence of uniformity, and the fissures between different sections of society are so wide and deep, that it is necessary to explain that, even with regard to the branches of education that can be appraised by means of statistics, the divergence is enormous between the classes by whom full advantage is taken of the facilities within their reach, and the vast bulk of the population by whom it is desirable that such advantages should be appreciated before the latter can be truly denominated popular. I point this out because I am well aware that there are classes in India to whom some of the remarks I am about to make do not apply. But I am treating of the masses only, and, to borrow a metaphor from Dr. Johnson—the lexicographer, not the author of the paper on education which I have just mentioned—the fact that, after some search, one pear and two apples have been found in an orchard does not prove that the orchard is fruitful, so in this case a brilliant example or two only serves to make more apparent and impressive the general prevalence of the opposite state of affairs.

Under the above interpretation of the term popular education, namely, the appraisalment of the various influences that chiefly tend to the formation of character amongst the masses of the Indian population, the development of the intellectual side of that character does not here, any more than in other countries, hold the first place. In this respect, perhaps, my observations stray to some extent beyond the usual limits imposed by the rules of this Society, because, as I have just mentioned, it is in this aspect that the subject can be best, or, at all events, least inadequately gauged by statistics. But the statistics that are available have by no means been ignored, though, as my subsequent observations will show, they require a considerable amount of explanatory comment before they are to be taken as a basis for general conclusions. None of these explanations compares in importance with that which is concerned with the medium in which the intellect has here to work, since it is on the conditions induced by general circumstances that depends the chance of assimilating what it is sought to implant by special and, as it were, artificial

means. These circumstances are of course manifold, and it is only of the salient features of their aggregate that I can attempt to treat on this occasion.

First of all we have the predominant fact to consider that India is, and in the main always has been since the dawn of history, a country pre-eminently agricultural in its capabilities. It has few natural advantages that tend to the development of industrial enterprise as it is understood in this country. Water power is available only in special localities, and to a very feeble extent. Coal again is restricted to a few small tracts, and other minerals in common use here are there equally sparsely distributed. Then, again, partly from the greater facilities for cultivation in the early days of the present civilisation, partly owing to peculiarities in the social development of the community, the industrial classes have never been recognized as other than inferior in position to the rest of the community, and there has been no encouragement to them to co-operate to an extent that alone renders possible manufacture on a large scale. It is then with an agricultural population that we have to deal, with all the praiseworthy qualities that usually distinguish that class, and all its characteristics that are adverse to rapid or complete development. The great physical variety, moreover, that we meet with in India produces special features to which consideration must be given, remote as they may at first sight appear from such a subject as education. Where the people live mainly and directly on the produce of the soil, nature may do too little or too much for them, the result, from an educational standpoint, being equally disadvantageous. There are considerable tracts in India which possess all the attributes with which popular opinion invests tropical countries; where, to use a well-worn phrase of a past generation, it is only necessary to tickle the soil with a hoe and it smiles with a harvest. Here, obviously, so long as the population remains at a respectful distance from the productive capacity of the land, education is in abeyance. Man has no reason to take thought for the morrow. As Rabbi ben Ezra asks—

“Irks care the crop-full bird?

Frets doubt the maw-crammed beast?”

Popular education begins with the struggle for life, when man has to adapt circumstances to himself, rather than to indolently acquiesce in what he finds ready for him. We may then find ourselves at the other end of the scale, as on the arid plains and storm-swept hillsides of the uplands and coasts of India, where the only education available is that of unremitting daily toil, without which life cannot be sustained, and which has to be conducted on

the empirical system handed down intact from generation to generation, no one having time to give a thought to improving or varying his lot. Of the two extremes, the latter is the more hopeless, and fortunately it is also the rarer. In India we find the situation solved in various ways. Within reach of some of the tracts in question is an annual demand for labour in large towns and seaports, and immigration is in itself a branch of education. Where this outlet is impossible, or available to a few only, as in the more remote Himálayan villages or table-lands, the usual tendency of the population to increase is kept under restraint by special social regulations, such as the devotion of younger sons to a monastic or celibate life, or the custom of polyandry, under which the bride becomes the wife of both the eldest son and all his brothers. But over the greater part of India a more normal development of the physical or material influences on education has taken place. Experience has modified the treatment of the soil in proportion as the multiplication of the inhabitants tended either to push population further from the parental settlements, or to render more necessary what is now-a-days called intensive cultivation of the estates immediately adjacent to the latter. Improvement in this respect has been no doubt more marked within the last two or three generations than during the unsettled times of the preceding centuries, but the process has been in continuous operation, no doubt, ever since the settlement of an agricultural population on the plains, irrespective of all political changes. It is slow, of course, but has reached a stage, on the whole, in which the mind is receptive of, and often indeed on the look out for, fresh improvements, though averse to experiments of the success of which it is not assured. The Indian peasantry² of the better class are now fully alive to the possibility of making two blades of corn grow where only one grew before, but in a tropical or subtropical country the issues involved are two serious for them to embark on speculative enterprise. It is not the place to enlarge on this tendency, but a couple of instances may be quoted in illustration of the above remark. First, then, in many parts of the country, the clumsy, dirty and wasteful, wooden sugar cane press has been almost entirely superseded by a light iron article, placed on the market by a firm of European planters, proved in the presence of gatherings of cultivators at some of the great religious fairs and festivals, and now imitated by local blacksmiths in nearly all parts of India. Then, again, as soon as it was shown the wheat-growing peasant of the north that the field which gave

² The land is in the hands chiefly of small holders, either peasant proprietors or tenants on fairly fixed terms. There are scarcely any large estates which are farmed by their proprietors.

9 bushels per acre by his traditional method of tillage would yield 13 bushels if irrigated and manured, nearly the whole area commanded by wells and canals became in the winter one vast wheat field, and the millets and smaller grains were relegated to the autumn harvest, which depends on rainfall. Other instances such as those of cotton and indigo, on a large scale, and coffee on a small, might be adduced in support of the statement, but the above are enough to illustrate the nature of the influence of physical or material circumstances on the development of the popular character, and we can now pass on to the social influences which bear upon it. The first of these needs little comment, as it follows directly upon the two physical characteristics which I have mentioned already, namely, the prevalence of agriculture and the absence of arts and manufactures: I mean the weakness of the urban element in the population. In a paper I read here some fifteen or sixteen months ago, it was pointed out that not 5 per cent. lived in aggregates of 20,000 inhabitants or more, and that only $4\frac{1}{2}$ per cent. more was found in smaller aggregates, so that less than a tenth of the whole population could be considered urban, even under the widest extension of the term. The gap, moreover, between the two classes is greater than that proportion by itself implies. The village, originating either in colonisation by families, or in the necessity of mutual protection, is, or everywhere tends to be, the social unit in India, and as such to become a small world in itself, a microcosm, paying its way either directly by its land or by the produce thereof. So that, in respect to education under social influence, the medium to be pierced before inherent aptitudes can be fully developed or examples from outside can be assimilated, is not merely the traditional devotion to old custom which is the characteristic of all peasantry as compared with the citizen of the busier atmosphere of a town, but also the exclusiveness and jealousy of a self-sufficing community. If it were only the former, we have abundant instances of how the sentiment gives way before distinctly advantageous modern innovations, though it is curious to see how in India the change is still referred to custom for a basis. For example, that very case of irrigation, which I cited just now, may be taken, as it has been, if I recollect right, by Sir Henry Maine. A canal is brought within reach of the village lands, which had never previously been irrigated, but the distribution of the water was determined, not in accordance with the actual facts as they then stood, but on a fictitious basis of the customary rights, which *would have been* exercised in bygone days had there been occasion to exercise them. It is the same with regard to less general rights and practices. The appeal is invariably to ancient usage, the only authority recognised, though it may be brought

“up to date,” if occasion demands. But however much custom may be disposed to give way in such circumstances as the above, the change has to pass through a village community. The peasant is naturally prone to think and act as one of a class or group, and to distrust individual inclination or impulse, and his collectivism, if the term be now-a-days allowed in that sense, is intensified many times by the, relatively speaking, complete organisation of the isolated little society into which he is absorbed. The village has its own hierarchy, its own regulations and customs, under its own sanction: the land round it, if not completely occupied, is nevertheless practically at the disposal of the village authorities, for though in many, even most, parts of the country it is equally available to any outsider, there are few who would venture to enter upon it against the wishes of his future neighbours. If he did he would be likely to meet with most curious agricultural misfortunes. In these circumstances a new idea must commend itself, not to the enlightened individual alone, but to the wisdom of the village at large, and it is as little likely to be engendered within the community as it is certain to be regarded with rank distrust if it be imported from outside, especially from a large town. It is true that this exclusiveness is now subjected to what is undoubtedly a disintegrating influence, that of the present system of law and administration, which tends towards the emancipation of the individual from his communal bonds; but the period during which this force has been in operation is too short in the life of a people to have had much effect in counteracting the results of ages of inherited sentiment in the opposite direction. It is also open to question, though this is a matter which I do not propose to broach in connection with the present subject, how far these legal tendencies, which have not arisen out of popular feeling, but have been applied as it were, from outside, have been assimilated into the general social system.

I have hitherto spoken of the population as consisting of only two sections, one preponderately numerous, the other very much the reverse. I have divided the community into, first, a large body of agriculturists, with a small contingent of handicraftsmen working on a small scale, and secondly, into an enormous aggregate of independent village communities, with a minute sprinkling of towns of above the size of a local market. But the next social units with which it is necessary to my subject that I should deal are of a very different character. They refer not so much to the occupation and functions of the people or to what may be called, on a small scale, their political congregation, but to what from an educational point of view is much more important,

that is, their religious, ceremonial, and, above all, their domestic relations. I speak of what are known to us by the Portuguese name of *castes*. I can only touch here upon the barest outlines of this complicated subject, and will just bring forward enough of its main features to explain its great, indeed we may almost say without exaggeration, its overwhelming influence upon the education of the majority of the Indian population. The caste system, indeed, nominally prevails, strictly speaking, amongst the Brahmanic community alone: that is, amongst those who accept Brahmanic ministrations and recognise the religious and social pre-eminence of the Brahman. But, in practice, there are few sections of the community that are free from it. The bulk of the Musalmans in India are local converts from the Brahmanic fold, and have preserved to a great extent their former unregenerate social observances and traditions. The Jains and Sikhs are simply schismatics. The forest tribes occupy the borderland between Brahmanism and the organised animistic creeds of their ancestors. Those who remain in the woods are staunch to their ancient faith, and have their own priests and ceremonial. The fringe that lives adjacent to the plains is gradually being absorbed into Brahmanism by means of caste inducements, not by anything in the nature of proselytism or conversion. So that we may roughly say that except amongst the frontier tribes of the north-west, where Islam is strong and tribal feeling stronger, and amongst the Buddhists of Burma, a portion of the Christian converts, and the small communities of the hill tracts, there is a general adherence to the caste system. Even foreign tribes, such as the Parsis and Beni-Israel, or Marathi-speaking Jews, have acquired a considerable dash of the prevailing sentiment regarding this matter.

It is as well to explain at once what is here meant by caste, namely, a community entered only by right of birth, which marries only within itself, and which is similarly restricted in regard to eating and drinking, of a formal nature, that is, other than the mere acceptance of uncooked grain or a drink of water. It comprises a complete scheme of life, regulated by its own rules and customs as to the most minute detail of domestic ceremonial and its relation to those outside its limits. It owes its origin to sacerdotal influence exercised with regard to differences first of race, then of function, and, finally, as civilisation advanced, to those of sect or doctrine. This being so, and the principle having been established that worldly position is determined absolutely by birth and not by personal worth, the only link between the heterogeneous component parts of the community thus subdivided is obviously that of general recognition of the Brahmanic supremacy. Each caste, like each

village, is a law to itself, and breaches of caste discipline or ceremonial are punished by the committee of elders. Now, without entering into the question of caste-origins and development, I may point out that ever since the re-establishment of Brahmanism on the decline of Buddhism, that is, for the last two thousand years or so, the Brahmans, or hieratic class, have consistently held that beyond their own circle the whole community belongs to the servile or depressed order. I shall presently treat of the connection of this important doctrine with the intellectual development of the population, but for the moment it is necessary to ask your attention to the more general influence of the system.

Like all other institutions that have obtained a firm or general footing amongst large numbers of different classes, and have retained their hold over the masses through generations of adverse influences, the caste system has obviously much to recommend it, though its deficiencies as what I called it just now, a scheme of life, may be sufficiently apparent to those who approach the question from the outside. On the one hand, it effectually diverts the sympathies from the consideration of questions that affect the community as a whole, and narrows the views of life even more than the uniformity of occupation or the isolation of the village. Then, again, it fixes a barrier theoretically, and in by far the majority of cases practically, insuperable between the different ranks of the community, and, in consequence, a social ideal is established of a highly artificial character bolstered up by elaborate ceremonial, the expenditure on which is the measure of the family aspirations. The "noble discontent," therefore, which is so powerful a stimulus to exertion in the West, there finds no productive outlet, and is limited to the elevation, perhaps, of the standard of the foregoing generation, without widening its scope, and without being greeted with aught but the discouragement of non-recognition by the ranks above in case of success in its own line of life. The industrious and intelligent labourer or artisan may acquire wealth by his enterprise, and receive the recognition of the State of his acts of charity or public benefit, but in his own community his position is unchanged, and no daughter of a family above him will be given him in marriage, nor, in local ceremonies or festivals will he be assigned a single step higher than before his success. This, of course, acts to some extent as a discouragement to exertion beyond a very moderate limit, a trait which has often been noticed amongst the lower classes of Indian society by those who have had long experience of them as labourers or artisans. The majority aim at little beyond a bare subsistence, because in the rank to which they are bound for life to belong, so little use, socially, can be made of the surplus. I need not say that means

have been found to evade the hard and fast rule without openly violating it, and we often find that the man of wealth becomes the triton of a fresh set of minnows, and in a generation or so the family disowns all connection with the shoal amongst whom its early life was spent. This, however, is a feature which need only just be mentioned here. Another, which appears to me to be chiefly due to the restrictive influence of the caste-system, is the very general absence, amongst both upper and lower classes, of any sense of proportion, with its usual accompaniment of a somewhat exaggerated personal vanity. This is a trait which is very prominent and easily discernible by anyone who has intimate or frequent intercourse with the people, and, though I do not throw out the suggestion more than tentatively, the origin is to be sought, I think, in the concentration of the thoughts on the narrow and comparatively trivial subjects which alone are comprised within the caste-circle. The minute detail of ceremonial and the importance attached to it; the peculiar and very prevalent view that a family can be raised by the marriage of a daughter to a husband of higher status, whilst the son must never expect a bride above him in position; and the standard of estimation in the eyes of the caste, which is practically the expenditure on such unions. All these tend to exaggerate the personal element, and to obscure from view objects of wider interest.

But we may now turn to the other side of the caste question, and it will be seen, I think, that, setting aside the marriage regulations and customs, which are too elaborate and various to be discussed here, the balance, from the standpoint I am now occupying, is by no means entirely adverse to the existing state of things, though obviously there is much to reform. In the first place, against the restriction of sympathy to a narrow sphere, we must set the fact that, owing to this sentiment, such a measure as the poor law or general provision for public relief, except, of course, in time of famine, is unnecessary. Each caste provides for its indigent members in its own way. Widows, where, as in most of the upper classes, they do not remarry, are maintained in the household of their relatives or connections; in a humble capacity, it is true, but still they are supported through life. Brahmans are met with offerings wherever they present themselves. Able-bodied men are provided with employment, and the decrepit and blind are either kept by subscriptions in kind or sit by the nearest roadside and ask for alms, never in vain. The devotion of the younger members of a family to their elders is proverbial. In fact, the caste feeling overrides all others to an extent that in some cases may seem to us exaggerated. The malefactor, for instance, who has not violated caste rules, or who

has duly purged himself of any pollution he may have chanced to undergo during his incarceration, is received back on his release with his reputation nominally unsullied, though there may possibly be some esoteric suspicion that too close an intimacy with him is undesirable. This brings us to the second great feature in the favourable side of caste, namely, the efficacy of the system in maintaining the conventional standard of morality. So far as the present argument is concerned, it is of no consequence that the standard may not be according to our views a high one. It is enough that a definite standard is recognized, and that machinery exists within the community itself to ensure its observance. There are, furthermore, two points in connection with caste which ought never, I think, to be allowed to drop out of recollection in treating of it. First, that the system has grown up historically, and for all its ordinances, whether good or bad according to the standards of more advanced nations, a reason can be assigned. Historically, therefore, and only in process of time, can its improvement be effected, and its provisions destructive to the development of the popular character be sloughed off, as the popular sentiment with regard to them undergoes change. The second point is that caste is inextricably bound up with the religion of the majority of those who conform to its rules, that it is admittedly through caste that that religion is able to maintain its hold of the masses, so that it is through caste that social improvement must work in order to be permanent. This is tantamount to saying that the key of the situation is held by the Brahman so long as present conditions remain unchanged. It is important, therefore, to appreciate, as far as my space allows, the attitude of this class toward the rest of the community. To begin with, their hieratic character is entirely independent of any participation in priestly ministrations such as those to which they owed their origin in Vedic times, and, like other caste attributes, is due to hereditary succession. The part played by them in domestic and other ceremonial is that of the monopolist of the Scripture or sacred texts which are regarded as binding incantations by the orthodox. I have already mentioned that according to the canon of the revived Brahmanism, there is, beside themselves, only one order, whose duty it is to serve Brahmans, and who are theoretically excluded from all study of the sacred writings. The learned professions, which in India, before the present *régime*, were all of a quasi-Scriptural character, were entirely in the hands of Brahmans, who, to maintain their unique pre-eminence, were bound to uphold with all their might the doctrine of the immutability of inherited position, and the importance of keeping inviolate the ceremonial rules of the caste, to prevent the multiplication of

the lower grades of society, whose revolts at various periods have been highly inconvenient. The ideal set by themselves has thus become the standard of the rest. The middle and lower classes have no prohibition of the marriage of widows, nor is it by any means obligatory amongst them for a father to marry off his daughter before she reaches the age of 10 or 11; adults, in fact, are preferred. But as a family rises in wealth, and is in a position to adopt a higher standard of living, the very first manifestation of social ambition is the imposition of life-long widowhood, and the reprobation of marriage with any girl who has passed out of childhood, because the Brahman does it. This rule is subject, necessarily, to considerable local variations, as may be seen in the census reports, but taking the population as a whole, it is generally prevalent, and to it is usually added the practice of secluding the women of the family from public view, a custom not of Brahmanic origin, but due to the influence of the later *régime* of the Musalman. This tendency is not peculiar to India, as every community chiefly composed of peasantry seems to be reflexive in its movements, and rides, as it were, with its face to the tail. Its aim, even though progressive in reality, is always based on reaction, and is referred to a condition of things antecedent to that out of which the change immediately arises. But in India the ancient custom of the superior classes is peculiarly easy to adopt, and involves no inroad on the conservative instincts of the rustic, whilst it cannot be censured by the class whose example is being followed. Thus, assuming that the marriage of immature girls and the prohibition of that of widows are practices not compatible with the advance of education in the community, the maintenance and extension of the Brahmanic ideal are distinctly retrogressive. It appears from some utterances of the latter class of late years that this is admitted in word, though found inevitable in fact. The knot therefore will not be solved by the Brahman, but must be left to other influences on which I may have space to add a few words at the conclusion of this paper.

We must now turn to the less abstract side of the subject, and devote a short time to the attitude of the Brahman towards popular instruction, or the intellectual development of the community of which he forms the apex. In early times, as is usual in such cases, the whole learning of the community was connected with religious worship and doctrine, and was monopolised, therefore, by the sacerdotal order. Later, on the revival of Brahmanism from its period of depression under the Buddhistic propaganda, literature and poetry were invaded by some of the mixed castes, that is those born of Brahman or other high class fathers, and mothers of

lower origin. But the Brahmanic literature of the period, which sets forth most clearly what the sacred caste held to be ideal orthodoxy, indicates the strong dislike of the Brahman to any encroachment of other castes on his intellectual domain. It was open to him to withdraw at any time, like the denizens of Pandemonium, "to a hill retired,"—

"And reason high,
Of Providence, foreknowledge, will or Fate,
Fixed Fate, free will, foreknowledge absolute,
And find no end, in wondering mazes lost,"

and many no doubt did so, leaving the road clear to schismatics and reformers. But caste distinctions were left untouched by all alike, and on the return of the Brahman to power, we find the severest fulminations in the ideal codes of law are levelled against the lower orders who attempt to encroach upon the learning or occupations of those above them. The savage penalties imposed are no doubt little more than a counsel of perfection indicating what ought to be done rather than what the State could venture to do, but the feeling that prompted their promulgation is the important point, and this is fairly accurately reproduced in the text as we have it handed down by unbroken tradition. Coming down to more recent times, we have the Musalmans, who were unaffected by this prejudice against the lower orders, though their recruitment from the people in India led to the incorporation of much of the current caste feeling and practice. Apart from this, however, the literary aspirations of this community were and are much too restricted to the study of, or the acquaintance with, the Kuran and works of a purely doctrinal nature founded on it. The spirit, in fact, is much the same as that which animated Omar in his dealings with the Alexandrian library. Popular education amongst the Musalmans, then, may be said to begin and end with the recitation by heart of the whole or part of the sacred book, of which they too often do not understand the meaning of more than two or three words. The upper classes alone pursued secular studies, such as philosophy and *belles lettres*, to even a moderate distance.

There is a great deal more to be said on this branch of my subject which it is beyond the scope of this paper to discuss. What I have said above will suffice, I trust, to show generally the predisposition of the masses in India towards or away from what I have called popular education in its widest sense. The tendencies, so far as they can be summarised, are to crystallise society into a number of independent groups, racial, or more often functional, but each occupying a definite and fixed position in the social scale, and each function being, as far as possible,

hereditarily exercised. Under such a system book learning has grown to be merely the stock-in-trade of certain classes, as the plough, the hammer, or the loom is of others; and this feeling is fostered by the literate classes in question, so far as is possible under the present conditions. It is to this side of education, namely that which can be imparted through direct instruction, that I must devote my next remarks, and all the more because it is, I fear, the only part of my subject that falls within the legitimate province of the Society, as it is, to a great extent, susceptible of statistical test. But in regard to public instruction in India, there are, I find, some rather widely disseminated misconceptions, one of which has to be removed, according to my view of the case, before I can produce before you the statistics in the light that will serve to dispose of the other. The notion in question is that India was found by the British to contain an educated population, and that we succeeded to an extensive and flourishing system of popular instruction. Now this is entirely erroneous, and to prove it to be so it is only necessary to trace it to its origin. The first administrative settlements of the British were in Bengal, where the language of the Courts and offices was Persian, which was also the polite language of the Moghal's *entourage* and of that of his powerful deputies in the provincial seats of government. To this exotic, therefore, was the attention of Warren Hastings first directed, and encouragement was given to colleges for the study of both Persian and Arabic, with which the course of instruction was generally combined. In very few years, the researches of Sir William Jones and others led to what we may now call the rehabilitation or even the resuscitation of Sanskrit, and establishments for its study arose under State auspices and aid in both Calcutta and Benares, the ancient centre of Brahmanic lore. It also appears that institutions on a smaller scale, and with a more modest curriculum, were dotted over the country in connection with the above languages, but chiefly rising little above what are known as Rote schools, in which the Vedic and other texts, or the Kuran, as required for daily use, were the only subjects taught. It is probable too that a set of schools existed, at all events in the larger towns and markets, for the benefit of the sons of tradesmen and young Brahmins who were destined for secular work under the local authorities, and in these the rudiments of the three R's were imparted until the boys were called away to the shop in the one case, or to their father's offices in the other. It is simply an abuse of terms to call this popular education, and it is clear that no importance was attached to these denominational or hedge schools by the British, who were nevertheless evidently on the look out for any native growth which

they could train into public utility. They found, in fact, ready to hand the traditionally and professionally literary classes of the country, whose interests were accordingly at once taken up. It was not until 1854 that a change in policy took place,³ and in the meantime the great battle between the Anglicists and Orientalists, which affected practically only secondary education and those that took advantage of it had been fought and won by the former. In 1854, however, a despatch was sent out by the Court of Directors which has been rightly called the great charter of popular instruction in India, and the time that the views therein expressed were first put into practice, marks the beginning of a genuine and cordial attempt to organise and extend a general system of education that would influence the intellect of the middle and lower classes. The lines adopted were, as in India is inevitable, not uniform throughout the country. I need not go into detail, but I may just mention a few main points of divergence. For instance, in one province the scheme of public instruction was devised so as to conduct the pupil without break from the rudiments up to the university, of which three were established in the mutiny year in the respective presidency towns. But in another it was thought better to aim no higher in the elementary institutions than was necessary to furnish the rustic population with just enough useful knowledge as would aid them in the practical duties of their after life. Those who wished to continue their education, therefore, were encouraged to enter the primary classes attached to secondary schools; there the course of study was avowedly directed towards the grades above. Then, of course, we have the compromise, in which the first plan is adopted up to the high schools, where the bifurcation between a strictly academic and a more practical and commercial curriculum takes place. In another direction we find a greater recognition of what are departmentally termed "indigenous" institutions, that is the hedge schools mentioned above, than in others, where the standard established by the class that mainly provides the pupils is higher than is usually reached by, or expected of, such teaching. Similarly, the treatment of these schools is different. In one part of the country they have been successfully incorporated into the general system, by enrolling each institution which combines adequate efficiency with the desire to enter permanently the State service, and this seems to have been the original intention of the authors of the despatch of 1854. Elsewhere, they remain outside, but by conforming to the general standards, and submitting their classes to examination, and their schools to inspection, they are supported

³ In Bengal, perhaps, isolated movements on a small scale seem to have been initiated, but attained little prevalence.

by a grant-in-aid. In other provinces, as above mentioned, there is no demand for them, as the circumstances of the tract admit of a full supply of trained teachers within the State fold.

The whole working of the scheme set forth in 1854, as modified in 1859 in one or two important points of detail, when the original expectations had been disappointed, was scrutinised and discussed by the Commission in 1882-83, mentioned by Mr. Johnston in his paper, and it was necessarily a matter for congratulation to the Government of India, that this body of selected and representative experts was able to report that the lapse of nearly thirty years had proved the soundness of the initiative taken in 1854, and that where shortcomings had been found, they were due, as a rule, to neglect of, or divergence from, the principles then laid down. To bring the historical part of the subject up to the present time, I need only add that since 1883 the Government of India have published two quinquennial reviews of the progress of public instruction in all its branches, both of them prepared by distinguished departmental officers on the educational staff of the Province of Bengal; and from one or the other of these I have taken most of the statistics used in this paper, and on which I am now about to comment. Not all, however, for in order to appreciate the cumulative results of popular instruction, I have been obliged to resuscitate a corpse that I hoped had received fitting obsequies in Mr. Hooker's paper of January last, I mean the census. The two series of figures do not cover exactly the same ground, so far as the number of pupils is in question, for whilst the departmental return excludes a good number of persons studying at home or in private and unregistered institutions, who should appear on the census roll, the latter excludes those under instruction but not learning to read and write, a qualification which prevents the incorporation of the pupils at the denominational Rote schools, as well as the infant or lower classes in elementary institutions, whether public or private. Even supposing these to be taken to balance each other the census is likely to be in defect as compared with the departmental figures, because of the tendency mentioned in several of the census reports for boys who are still at school, but in the advanced classes, to return themselves as "literate" and not "under instruction." I mentioned in January that for this reason I consider it a mistake to discriminate the three classes at a census, and would prefer to call for a return simply of those who could and those who could not read and write more than their own name. I have therefore thought it right to accept as correct the number of male pupils shown in the departmental tables, and to subtract the excess over the census return from the number shown in the latter as literate. In the case of

the other sex I do not see sufficient reason to distrust the census, since the number of girls shown in the departmental returns as not yet in the reading stage, and the number in some provinces returned as attending Kuran schools only, and, finally, the fact that a high proportion of the pupils there are stated to be under 7 years of age, indicate that the difference between the two is, in reality, insignificant. The following table gives the numbers thus adjusted in British territory and the States the schools in which come under the Department of Public Instruction of the adjacent local Governments, as in Bombay and the Central Provinces :—

	British Provinces and Smaller Cities.	
	Males.	Females.
Pupils	3,517,778	168,274
Literate (but not pupils)	9,471,663	461,955
Illiterate	104,504,573	112,776,440
Total	117,494,014	113,406,669

Proportionally stated, the figures tell the following tale :—

	Males.	Females.
Under instruction	2'99	0'22
Not under instruction, but able to read and write..	8'06	0'34
Illiterate	88'95	99'44
Total	100'00	100'00

This, then, was the prevalence of instruction in the year 1891. Of the males, 11 per cent., of the females of India 56 per 10,000 were then stated to be not illiterate, or 6 per cent. of the whole community. There are three other aspects in which the return may be considered. First, it is allowable to deduct the children of both sexes under 5 years old, below, that is, school-going age, a process which raises the proportions to the extent shown below. I should have liked to have dealt with the

	Males.	Females.
Pupils	3'49	0'17
Literate	9'39	0'48
Illiterate	87'12	99'35

population of school-going age, as a whole, but as a further return will show when I treat of it presently, it is not practicable to thus distribute the pupils, since though the masses may cease to

attend school at 14, many leave long before this; whilst of the minority, a good many continue at school up to 19 or 20, and at college still longer. Roughly speaking, the proportion has been departmentally taken at 15 per cent. of the total male population. In the case of girls, it would not reach much above half that fraction, since it is rare to find them allowed to attend school after they have attained their marriageable age of between 10 and 14, and the proportion under 5 is considerably above that of the boys. The next light in which to consider the distribution is territorially or by provinces, a point which can be dealt with summarily by reference to the following statement, which shows the proportion

Provinces.	Illiterate per 1,000.	
	Males.	Females.
Madras	851	990
Bombay	860	990
Bengal	892	996
N. W. Provinces	937	997
Oudh	942	998
Sindh	915	995
Panjab	926	997
Central Provinces	941	998
Assam	924	997
Lower Burma	557	962
Upper „	538	985
<i>States.</i>		
Haidrabad	928	997
Baroda	856	995
Mysore	895	993

of illiterate of both sexes in the principal divisions of the country. As regards males, the difference between Burma and the rest of the British possessions must be noted, as it is due to the religious system in the more remote province. Buddhism there demands that every boy should spend a certain number of years under instruction in a monastery, and the establishment of these institutions being an act of religious merit, leading to substantial benefit in the next incarnation of the pious founder, is a usual way of disposing of wealth, the accumulation of which is reprobated in the tenets of the local faith. Not a large proportion, it may be mentioned, of these Hpongyi Kyaungs, as they are called, are included in the departmental returns, though a good many of the private institutions are gradually adopting the modern text books and methods of teaching mathematics and writing introduced of late years along with the British system. But when we come to the rest of India, instead of but little over half the male population being illiterate, we find the lowest proportion to be 85 per cent., and throughout a considerable portion of the country it rises above 93. All that

need be remarked about the other sex is that, except in Burma, the illiterate nowhere form less than 99 per cent. of the total number.

We have then the distribution according to the main religious creeds. Here, again, no detailed comment is necessary, since nearly three-fourths of the community are returned under titles which include such wide divergences in their sub-divisions as to be valueless as aggregates. We must take, for instance, the Brahmanic community by castes, and if we divide the Christians, similarly, into native converts and foreign sojourners, the results are very different from those given in the following table. The

Creed.	Percentage of Illiterate.	
	Males.	Females.
Brahmanic	89·5	99·6
Sikh	90·4	99·6
Jain	46·6	98·6
Buddhist.....	52·6	97·4
Parsi	22·3	49·9
Musalman	92·9	99·7
Christian	65·7	86·4
Jew	48·1	78·6
Forest Tribes	99·2	100·0

only remarks on the figures, then, that need be made are that next to the European element, the Parsi is the least illiterate, and represents the only indigenous section which has an appreciable proportion of literate women in it, and the whole Zoroastrian community numbers less than 90,000 souls. The Jains, which come next, show remarkable divergence between the figures for the two sexes. This is due to the fact that the males included in the area where education was returned at the last census are nearly all traders, whilst their households have no such characteristic to raise them above the general dead level of their sex. The Jews, again, form a small and scattered community of less than 18,000. The Sikhs are cultivating landholders of military proclivities, neither of which pursuits is favourable to the diffusion of book-learning. They are probably, however, a little more literate than the table shows them to be, because many know their scriptural alphabet and literature, without being able to read the Persian character, which is that taught in the public schools of the Punjab. The Buddhists, as I have just said, are concentrated in Burma and the Himalaya, and can generally read and write.

But there is another point in connection with the permeation of literature through the community at large on which the census alone throws any definite light. This is the component parts of

the class shown above as not illiterate. The information collected relates only to those returning themselves as no longer under instruction, but no doubt many of the pupils of the higher institutions are here included, and even irrespective of these the return sufficiently fulfils its object of indicating the social classes that take advantage of the instruction placed within their reach. The tables treating on this subject are based on individual castes, numbering, of course, many thousands, all of which were classified into conventional groups, based partly on racial, but mainly on occupational or functional considerations; not necessarily the occupation, it must be understood, exercised in the present day, but that traditional in the caste and from which it derives its name. The object of this combination, I need perhaps hardly observe to my statistical colleagues here, was not to serve any anthropological purpose, but merely to ensure uniformity of treatment in the twenty or so units of compilation over which the 287 millions of people were distributed, so that the central authority might be confident that in analysing the aggregate of the returns he was dealing with material identical, or nearly identical, in all cases. Now, as there are no less than sixty of these caste-groups, I do not propose to do more than skim the surface of the very suggestive results of the above analysis. The first glance shows us two facts: one encouraging from the standpoint of comparison with the past, the other rather startling as to the situation at present. We find, on the one hand, that amongst these sixty social groups there is not one which is entirely barren of people who know how to read and write. Of course, if we take individual castes, in different parts of India, there must be hundreds in the latter condition, but looking at society in what we may describe as *strata*, to use a geological term, it is remarkable that the lowest sections have managed to obtain a crumb or so of instruction, and it is quite certain that this was not the case half a century ago. Even now the share of the majority of the groups is insignificant, save in connection with this last consideration, but the encouraging fact is that it is there at all. This brings me to the second and less satisfactory aspect of the table. We find that the proportion of one-tenth of the group is literate in no more than eleven instances out of the sixty, and that these eleven, containing 52 per cent. of the total number of literates of the country, represent less than 14 per cent. of the population. Even from this selection we must make certain deductions, as in the 52 per cent. are included nearly 14 per cent. of Burmese, Europeans, and Eurasians. We then get the results shown below, that over 86 per cent. of the people share amongst them something under 48 per cent. of those who can read and write,

scattered over some fifty functional and other groups. The great agricultural and pastoral group, for instance, shows $2\frac{1}{2}$ per cent. of literate amongst its component parts. The artisans fall slightly below this, and no item of either group is included in the inner circle of the 10 per cent. These figures show the comparative concentration of instruction within the classes to whom it is the traditional and direct means of livelihood, and its comparative neglect where it can only be of value as a factor in general education. But this is a matter on which my remarks must be deferred till we have done with the statistics of the subject.

	Percentage on Total.	
	Population.	Literates.
Brahmans	4'90	16'81
Writers	0'94	4'74
Traders	4'11	13'74
Native Christians	0'72	2'05
Parsis	0'04	0'42
Others	0'22	0'69
Foreigners and Burmese	2'88	13'86
Balance	86'19	47'69

I therefore pass on to the last statistics which I propose to introduce. They relate to the quality of the instruction, even as those already passed in review show its diffusion, and are taken therefore from the departmental returns of public schools, by which are meant those conforming to the prescribed standards. There are, no doubt, over 39,000 institutions shown as private on the rolls, but most of them are merely denominational or rudimentary schools, with from 10 to 13 pupils apiece, and of a very fluctuating standard of learning and precarious existence. The following table contains the information in question:—

Grade.	Numbers.		Distribution per Cent.	
	Boys.	Girls.	Boys.	Girls.
College { Arts	12,940	45	0'43	0'01
{ Professional	3,261	31	0'10	0'01
Normal institution	4,327	819	0'14	0'27
Technical „	16,125	461	0'53	0'15
High	57,462	926	1'89	0'30
Middle	125,014	6,105	4'11	1'98
Primary Upper	343,734	19,920	11'30	6'47
„ Lower (a)*	1,819,849	178,477	59'83	58'08
„ „ (b)†	658,758	100,616	21'66	32'73
Total	3,041,510	307,400	100'00	100'00

* Reading printed books.

† Not reading printed books.

It shows that 93 per cent. of the boys and 96 of the girls are in the primary stage of instruction, and that over a fifth of the former, and nearly a third of the latter are not yet advanced to the stage of reading printed books; 4 boys and 2 girls in every 100 at school at all, had reached the middle grade, and 2 more boys had got as far as the higher. When we have to consider the university and other institutions, we must abandon percentage and take to the fractions of 1,000 to get an appreciable proportion, either for boys or girls. This brief exposition is enough to show that anything beyond elementary instruction has as yet made little way in India, and I fear that when we come to the tests applied to the work of the schools the real value of the figures will shrink into still smaller proportions. Generally speaking, the scheme includes a test of primary instruction at the end of the third or fifth year of attendance. The middle-class stage is closed by an appropriate examination, to which is added a special test for entrance to the lower clerical grades of the public service, whilst the high school, except where a special bifurcation of studies has been recently introduced, leads directly to the entrance examination to the university. The following table, which shows the number of boys considered sufficiently prepared to be subjected to examination, and the percentage that were successful at the test, speaks for itself:—

Test.	Number Examined.	Percentage Passed.
Matriculation	14,244	40
Upper secondary	1,355	28
Middle	24,385	49
Public Service certificate ...	4,869	33
Upper primary	99,449	61
Lower „	176,757	59
Total	321,059	—

Relatively few girls advance beyond the primary stage, but the still smaller number examined seems better prepared than their comrades of the other sex. About one in eight of the boys seem to have come to the test, and a little above half passed, chiefly owing to the greater success in the lower standards.

In a paper treating of popular education only, it is not necessary to discuss the branches of instruction which are not strictly included under that term, so the universities and their work may be said not to fall within the scope of my subject. But I wish to include in my general survey Indian education as a whole, and to appraise accordingly the higher culture as we have done the rest. In fact, if we are talking of an educated com-

munity at all, we cannot draw the line at the sixth standard, which represents in India even a lower degree of attainments than it does here, but we must imply something more extended. It is desirable, therefore, to see the actual extent of what is called the educated community. It has been shown already that at the present time only some 5 per 1,000 of the pupils of India have reached the university, including both arts and the professional faculties. The departmental returns show that during the last five years an average of about 18,000 annually appeared for matriculation of whom a third only passed the test. Of the latter class something under 38 per cent. proceeded no further than to the intermediate examination; 14 per cent. went on to a degree in Arts, and some 10 per cent. graduated in law, medicine, or civil engineering. To the great majority, the entrance examination is no more than a qualification for service under Government or under such private employers as require assistants of the literary calibre implied by this test, and to such an extent has this tendency grown in some parts of the country, that at least one university has been obliged to promote the establishment of an independent examination of the feeder schools, to serve the purpose for which its own doors were formerly besieged. As to the graduates, the universities have been now in operation for the last thirty-five years or so, and the total outturn in the Arts faculty may be estimated at somewhere about 16,000; but the present Vice-Chancellor of the Bombay University, a Brahman of great distinction, has just been deploring the serious want of stamina he has noticed amongst university men, and their generally short lives, so that the actual number in existence must be considerably below the above figure. This, then, is the nucleus of the intellectual life of India, and, as I have said before, there is in it no representative of the agricultural or the industrial backbone of the country, even if there be any to speak of in the stages between this and the primary schools.

I will not overburden this paper with statistics showing what has been done during the last forty years in the way of extending the provisions for popular instruction, or how far advantage has been taken of these provisions. The information is available elsewhere in a form more explicit than any I could adopt within my present limits. Progress there has been, and very marked progress, though not altogether in the direction where it was most needed; and the foregoing portion of this paper is calculated, perhaps, to indicate not so much what has been accomplished as the vast amount still to be done. It is on this consideration that I am laying so little stress on the system of education or on the State action with regard to it. Where there is no effective demand for education, or, as in India, a demand for it only

amongst a small minority, the part that can be played by system or by State initiative or aid is insignificant, and its results are no more than an excrescence or parasitic growth on the life of the community. What has to be educated is not the mind, which can be reached from school or college, but the will, which is moulded only by public opinion. The advance of the two independently of each other leads to results which are by no means free from difficulty and even danger. To take first the practical, and, I admit, the lower, side of the question, the professionally literate castes, as the returns show, are taking far more advantage of the educational facilities of the present system than the rest; so not only is the already wide gulf between the two being increased, but the too prevalent view is being emphasised and confirmed that instruction is merely a tool whereby a certain class gets its living, and with which the rest of the community has no concern. The notion once held that instruction would reach the masses best by "downward filtration" from the literate minority, was based on a misconception of the character of Brahmanic society, and has long since been abandoned. The hold of caste on occupation is strengthened by this unequal tendency, and the position of the lowest, who, like those at the opposite extreme of the social scale, are not bound down to definite functions, but are available to undertake any class of labour, is stereotyped in its depression. I spoke, in the beginning of this paper, of a specially meritorious work to which the efforts of Christian missionaries had been directed. This is in relation to the education of the classes whose contact and presence is traditionally polluting to the rest of the Brahmanic community. To enforce, in the case of such castes, the equality of treatment in schools to which, under the Queen's Proclamation of 1858 and the rules of all State departments, they are entitled, is equivalent to a decree of eviction against the rest of the pupils. Not one could, under pain of excommunication, remain, and the master himself would be in the same plight. I have myself seen, in place of the traditional rattan for corporal punishment, a row of hardened clay pellets on the tutorial desk, which were thrown with the accuracy of long practice at the impure urchins who were receiving instruction in a row outside the building occupied by the rest. The Government has had to recognise the prejudice, and to ordain that it should be met with tact and patience, but not directly infringed. Now the important feature in this digression is that these educationally boycotted castes contain over 57 millions of souls, or one in five of the population. If it were not for mission schools and public institutions established in special tracts where such castes are strong, not a boy amongst them would be able to acquire the rudiments of learning. To return to the question of

the relations between the minority and the masses, we already find that the real influences on public opinion are only to be learned in the court, in the field, at the well, or under the big tree in the middle of the village; and to go to the school or Press for such information is to incur the certainty of being misled. The boy of the literate class, if not of town origin, spends most of his youth in a town if he aims at secondary education, acquires urban tastes and urban views of life, which unfit him for sympathy with rustic concerns, just as the peasant complains that retaining his boy up to 14 in the primary school softens his hands and makes him unable to do his full day's ploughing. Then, again, the strict caste-*régime* that prevails amongst the literate community shows little or no signs of material relaxation, though in one or two points there are manifestations of revolt amongst a small minority who may finally succeed in leavening the mass. Thus the outlet for the youth of this class is annually growing narrower, and the market for their industry more glutted. India can only provide litigation for a certain number of legal practitioners, and the higher class of student has hitherto shown little aptitude for any other profession but that and the service of the State or public bodies, which is, again, a more or less fixed quantity. Medicine and civil engineering, for which there is an opening, are only favoured by a narrow class, not always the *élite* of society. Further into this question it is not necessary here to enter. It is when we turn to the moral aspects of the extension of intellectual education in a population subdivided and constituted as is that of India, that we find the gravest reason for deliberation. It is not merely that the rift between conviction and conformity is growing wider; that the head is growing faster than the heart, for that is usual, if not universal, in the experience of national education, but it is the causes that tend to retard, and perhaps to prevent, re-adjustment, that must give us pause. The very first and foremost educative influence in a State is that of the family, not the school. There is a phrase of Richter bearing on this that is worth remembering: so much so, that I have prefixed it to the chapter on education in my census report; but, as I do not flatter myself that I have thereby made it trite or universally known, it is worth citing again:—

“The waves of the ocean, before reaching the child, break against four walls which encompass the water of his education or crystallisation. Father, mother, brothers, and sisters, and a few extra people are his forming-world and mould.”

And in India, as I hope I have made clear, he has also an outer line of defence, in his caste. But, withal, the main influence is that of woman. I have heard and read a great deal on the sub-

jection of women in India, and the deadening influences of the zenána system; but, as to the latter, I can speak from personal experience, and history confirms it, that there are few shrewder negotiators, or persons more alive to what is necessary for their own purposes or the interests of their estates, than the ladies with whom one has to do business with a curtain between us. As to their subjection, whatever may be the theory regarding it—and I must admit that the authorities use brave words—in practice, and again I speak from varied occurrences laid before me in court and village—I have invariably found, if the President will permit me to use an expression the political signification of which is scarcely older than this paper, that the predominant member of the domestic partnership was a certain old woman, generally the mother, not, as I have heard is the case in this country, of the wife, but of the husband. In India, in fact, as elsewhere, “she who rocks the cradle rules the empire,” and when we find that her sway in her own immediate circle is complete, her social aspirations are restricted within immutable limits, and those of her inferiors similarly kept from encroaching, and that she has no conception of any social grievance with which the elders of her caste are not competent to deal, we shall not go far wrong if we say her tendencies are likely to be conservative, and, looking at the very high place ceremonial and custom occupy in her religion and in her domestic arrangements, more probably than not she will be found to be a bigoted member of that party. Any inclination towards innovation, therefore, will be sure to be met with far more resistance from the women of the community than even from the men, and what the latter is I have given the means of judging already. In the mere matter of book learning it is less surprising to find the women backward than in regard to the abandonment of social customs which they no doubt recognize as harmful to their sex, but which, nevertheless, like some other fashions, they consider it a point of honour to endure. To explain this, it is unnecessary to go further than the antipathy of the men, especially of the literate castes, to the acquisition of learning by their partners any more than by their social inferiors.⁴ If any other reason be required it may be found in the fact briefly mentioned above, that in proportion as the Brahmanic hold on the masses is strong, the adoption of their ideal in regard to marriage is prevalent, so that there is a continuous tendency as wealth increases to lower the age of the bride, and to seclude the girls of marriageable age, both of which practices, I need hardly remark, have an influence fatal to anything beyond the very

⁴ For instance, out of about 15,000,000 of Brahmans, 1,957,000 of the males are returned as literate, but only 72,500 of the other sex.

rudiments of learning. Thus it happens that according to the census we find to every 1,000 males not wholly illiterate only 47 females of the same degree of acquirements, the disparity running in greater or less intensity through the whole community.

Nor is there, at present, any sign that the disparity is on the decrease. It may be said, of course, that within this last ten years or so female education has advanced faster than that of males, and the naked figures of the annual returns are called in evidence of this. Granted; but let us look if that is the real teaching of these figures. Consider the numbers involved, actual or relative. What a drop in the ocean! Ten years ago there were in every thousand women four who were not illiterate, there are now five. There has been a growth of secondary and middle-class education amongst them, but the tables show that it is confined practically to the small communities of Europeans, Parsis, and Christian converts, and has nothing to do with the masses. The number of pupils in training to take charge of girls' schools has increased, but it appears due only to the accession of Christian converts, as no other caste will degrade itself to so public a function. Now, the great bulk of these converts, and to the honour of the missions be it spoken, belong to the depressed or menial section of the Brahmanic community, and take their place in their little world, not according to attainments or conduct, but by virtue of their traditional and native position. They have no influence, therefore, outside their class-room, and so far as the parents of their pupils are concerned, are admissible to no share in social life. This, again, is not conducive to the spread of learning amongst the women of the country.

So long then, I repeat, as the disparity between the sexes in point of education continues at anything like its present extent, the influence of the home will be set dead against that of the school, except in so far as the latter acts merely as the agent for obtaining early in life a pecuniary position that will enable the recipient to dispense with further study. So long, again, as this mental divorce is the approved rule, all the education that can be imparted from without the home will be "of the man's life a thing apart." It will hang on him like Saul's armour on the shepherd boy, and for all the help it may give him in the battle of life, the Goliath of ancestral prejudice will die in his bed at a ripe old age. Knowing what it is my professional duty to know of the sentiment and practice of the home circle and domestic surroundings, to hear the great English classics or the vernacular renderings of the political history of Europe or America from the mouths of the urchins in the village or district schools, always brings to my mind Cicero's question when he saw his rather diminutive son-in-law

invested with the brand his father had borne in the civil war—"Who on earth has tied Dolabella to that sword?" In later life, it is too often the same, and the great principles of morality and state-craft that have been the brand of victory in the West, become in Oriental hands the court sword flourished to direct the movements of a sham-fight in which neither morals or policy are at stake. With policy we have luckily nothing to do on this occasion. As to morals, though the results of a system of public instruction may not be yet apparent amongst the masses for reasons I have already given, the system has borne a fruit esoterically, or within the fold, which is not altogether palatable to the mental horticulturist even if it be so to anyone else concerned. It is the results of testing intellectual proficiency and depth by means which connote moral conditions which have not yet been developed in India. Examinations in this country are, relatively speaking, successful, because it can be assumed with reason that the moral fibre of a candidate is up to a certain standard, so that it is necessary to test his intellect alone. It is not so in India, where the goal is considered attainable by the by-paths of morality as justifiably as by the high road. In fact, in some parts of the country, the art of swindling has received quite a fresh stimulus from the new field thus opened to it. Not a year passes without its crop of cases of personation, fraudulent acquisition of the examination papers, even when they are expressly printed in various towns in Europe; forged certificates of character, age, and departmental qualifications. In Bengal it is stated officially that detection is entirely dependent on accidental defects in the procedure, so that probably for every case found out, ten pass unnoticed. In a lower sphere of the education of youth pupils are borrowed for a day from one school for the annual examination of another. The prosecution of a few masters for fraudulent or forged registers of attendance had the effect of temporarily stopping the practice of submitting registers at all. A district board found it necessary to abandon the custom of giving annual school rewards, because of the fraud practised in order to get them. A municipality in another part of the country reduced the salary of a master who had offended one of the leading townsmen, first by expelling his son, and secondly by refusing to give that promising pupil a certificate of good character on which he might appear for the University examination. In another similar case a fresh school was set up by the city fathers, to ruin the too conscientious pædagogus. Finally, a master in a village on the border of a district got the reward at his annual examination, and then promptly transferred himself and his pupils to an adjacent village in the next district, where a second examination brought

him in a second harvest. The competition for promising boys in the aided schools of the capital of India, which is carried on by public advertisements offering rewards, by active canvassing, and by other means derogatory to the dignity of learning, such as tampering with registers, falsifying transfer receipts, and similar expedients which, outside the scholastic world, would be called forgery, has, it is stated, materially lowered the discipline of the whole body of pupils. The best prepared openly put themselves up to auction shortly before the examination. Others—I am quoting from the latest report to hand—confine themselves to sending anonymous accusations against the master or each other to the inspectors or other officials. In one case a riot was attributed by the master to “an improper sense of offended dignity.” In another, the inspecting officer, having asked the master to explain an intricate sum on the blackboard, was stoned by the loyal pupils as he left the building. One boy in a high school, who had been punished, burnt down the school and the master’s house. The next day the temporary building to which the classes had been removed was also set on fire; and the youth who was caught thus employing the resources of civilisation spent some time in a reformatory. In the east of Bengal a more complicated occurrence is reported. The English school in the town had been burned down twice in the year, on which the native gentleman who was acting as assistant inspector naïvely remarks that it appeared as though the master had created enemies by too strict discipline, or that an unhealthy rivalry existed between this school and another. The latter alternative seems the correct one, as I find that in the course of the year the rival school was also burnt down.

The serious part of these events is not, in my view, the actual offence or the spirit which instigated its perpetration, but the acquiescence in and the connivance with it by all who had any knowledge of what was intended or was actually going on. In the case of the fraudulent transfer of pupils and similar artifices to cheat the public purse or to profit by the wrong done one’s neighbour, not only every master round, every pupil implicated, but every parent, must have been privy to the fraud, and acquiesced in the methods by which it was successfully carried into execution, and, remember, it is not the low class hedge-schools where this goes on, but the secondary and, even more, the high schools that feed the university, the entrance examination to which is to nine out of ten of that class of pupils, the end-all and be-all of their education. It is after passing through an atmosphere such as that which this moral apathy proves to be prevalent, that the highest product of the present system is thrown on to the world, and when we hear of the educated classes in India,

we ought to have a clear conception of the grounds on which the application of that epithet is based. We have to appreciate not what the mouth has learnt to speak, but what the heart really cherishes. We have to consider what is the relation this class bears to the masses, what part it takes in the great life of the community; what is its numerical strength, and how far it is predisposed to admit the rest of its less gifted fellows to a share in the intellectual privileges on which it founds its claims; or how far it is inclined to perpetuate a traditional monopoly. What, again, is its attitude, not in precept, but in example, towards the deeply-seated influences that impair the general vitality of the country and cramp its energies? I have touched sufficiently on all these questions to show you, to say the least of it, that they have more than one side, and that however glittering the surface that lies uppermost, it by no means follows that all below is gold. I have shown, also, the proportion borne to the people at large by the class which by the utmost extension of the term, can be called educated. One of the authors most quoted by that class is Burke, so it will not, of course, be taken in bad part if I gratify them by a reference to the same favourite authority. He writes:—

“Because half-a-dozen grasshoppers under a fern make the field ring with their importunate chink, whilst thousands of great cattle reposing beneath the shadow of the British oak, chew the cud and are silent, do not imagine that those who make the noise are the only inhabitants of the field, that they are necessarily many in number, or——”

I do not continue the quotation, because he is rude to the grasshoppers, and I think that, like other insects, they have their uses, even if it be no more than as a weather-glass.

I must now bring this long and discursive paper to a conclusion. I have shown, and, I hope, clearly, the vastness of the undertaking on which those have embarked who are attempting to solve the problem of how India is to be educated. I have indicated how likely to fail is an endeavour to attack the position from outside, and to work on the mind, independently of the medium in which it is imbedded. I may borrow a metaphor from nature, though it probably appeals more to those who are acquainted with India than to you, who live where the cultivator is exercised to get the water out of his land rather than into it. We have bare hill-sides to deal with, parched by centuries of tropical sun, swept by season after season of tropical storms. The rain pours off their barren slopes as it falls, and a few hours after it has ceased, the ground is as dry, and the bed of the torrents as empty, as before. The first step is to get a sprinkling of scrub, brushwood, or small trees to secure a footing on the slopes; soil is rapidly accumulated, and under the shade of the new growth consolidates itself into a

permanent coating. When the rain next falls, it soaks in, and instead of rushing away in useless profusion, it is retained, and the spring level of all the country below is raised and the land can be irrigated throughout the twelvemonth. Now, in India, we have not yet tapped those springs. The land is not virgin soil, where we have only to sow and watch grow, it is only potentially remunerative, and at present shows only a few stumps of past generations, which serve merely to grow creepers on, pretty, no doubt, but ephemeral and unproductive.

It may be said that the progress of education according to my view has been insignificant. But remember first that forty or fifty years are as nothing in the life of a people. The great despatch of 1854 closes with a phrase which is, I think we may all agree, well worth repetition :

“To imbue a vast and ignorant population with a general desire for knowledge, and to take advantage of that desire when excited to improve the means for diffusing education amongst them, must be a work of many years.”

We have also to accustom the people to a *régime* of equality, to which they are even now little more than strangers, and which they have received timidly and with the suspicion born of centuries of experiences diametrically opposite in their nature to those to which they are now subjected. The sway of the sword has given place to that of the scales, wherein every person in the eye of the administration weighs equally before the law.

Finally, are not we western nations rather too prone to consider progress as a natural characteristic or tendency of the human race, and not to sufficiently realise the very narrow limits to which in that capacity it is confined? What people has shown it that has not been, at some time or other in its history, in touch, directly or indirectly, with that little spot on the north side of the Mediterranean where alone of all countries of the known world the spirit of progress has not been proved to have been implanted from outside? If it be an exaggeration at all, it is a splendid one of Sir Henry Maine, that, except the blind forces of nature, nothing moves in this world which is not Greek in its origin. How then is it to be expected that contact merely political between countries separated by half the world, whereof one alone has received the spark of Hellenic fire, will produce the same results within the same time or measurable distance of it, as that of contiguous or colonized nations? The longitudes are too far apart for the administrative clocks to keep the same time, and a mean must be adopted which will satisfy the one that the other is moving, but not go so fast that the latter cannot keep up with it.

I do not take, I hope, too pessimistic a view of the subject of

which I have been treating this evening, and I have nowhere asserted that the situation is approaching an *impasse*, though the advance has been in some respects singularly unequal. I look for the solution of the problem not to any direct effort on the part of the State, of private enterprise or of the literate classes, but to the stimulus of the steady advance of the masses in prosperity, in the educating influence of material circumstances, the opening of the mind by travel, commerce, and industry, all of which are now in their lusty infancy. I have no sympathy with those who delight in putting back the clock and rubbing their hands over the appearance of retrogression; who, in order to maintain their own position and influence, whilst the world is slipping past them, are ever croaking over a purely imaginary cessation of an advance, which they are too conscious will undermine their traditional interests. But I do protest, as I have always protested, against deception in the opposite direction, by going about crowing and clapping over some figment of an *ex parte* claim, based on flimsy, garbled and untested evidence, that the sun of enlightenment is standing in its blazing noon, when, in reality, it has only just reached the top of the mountain, and all the immense valley below is still shrouded in the densest gloom of ignorance.

APPENDIX A.—Table showing the Distribution by Caste-Groups of the Literate Population. (Census of 1891.)

Caste-Group.	Percentage of			Caste-Group.	Percentage of		
	Group on Total Population.	Group-Literates. On Total Literates.	On Group Population.		Group on Total Population.	Group-Literates. On Total Literates.	On Group Population.
I. Agriculturists (military)	9.46	8.10	3.94	XXXIV. Goldsmith's refuse cleaners ...	—	—	1.89
II. Agriculturists, others	17.48	10.89	2.81	XXXV. Iron smelters and gold washers ...	0.01	—	0.70
III. Cattle graziers, &c.	4.20	1.01	1.19	XXXVI. Fishermen.....	3.17	0.80	1.13
IV. Field labourers	3.11	1.25	1.86	XXXVII. Servants, &c.	0.07	0.02	1.43
V. Forest tribes	5.04	0.44	0.40	XXXVIII. Distillers and toddy drawers	1.84	2.44	6.11
Total agricultural, &c.	39.29	21.69	2.55	XXXIX. Butchers	0.20	0.03	0.63
VI. Priests	4.90	16.81	15.78	XL. Leather workers ...	4.59	0.53	0.53
VII. Devotees, &c.	0.85	1.00	5.41	XLI. Watchmen, &c.	4.68	0.63	0.62
VIII. Temple servants	0.11	0.25	10.32	XLII. Scavengers ...	1.32	0.17	0.59
IX. Genealogists	0.16	0.20	5.71	Total artisans and menials, &c.	30.39	13.47	2.02
X. Writers	0.94	4.74	23.37	XLIII. Grindstone makers	0.01	—	0.51
XI. Astrologers, &c.	0.10	0.39	17.58	XLIV. Earthworkers, &c.	0.42	0.03	0.33
XII. Ballad reciters, &c.	0.20	0.06	1.36	XLV. Knife grinders....	—	—	1.22
XIII. Singers, &c.	0.05	0.06	6.62	XLVI. Mat and cane workers	0.22	0.03	0.61
XIV. Mimes	0.01	—	3.87	XLVII. Hunters and fowlers	0.28	2.04	0.79
Total professional	7.32	23.51	14.80	XLVIII. Miscellaneous vagrants ...	0.12	0.03	1.19
XV. Traders	4.11	13.74	15.38	XLIX. Jugglers and acrobats ...	0.10	0.03	1.29
XVI. Pedlars	0.05	0.01	1.42	Total vagrants	1.15	0.16	0.67
XVII. Carriers (by pack animals)	0.34	0.06	0.81	L. Musalmans of foreign title....	12.52	9.46	3.48
Total commercial	4.50	13.81	14.13	LI. Thibetan and Nepali tribes..	0.08	0.10	5.64
XVIII. Goldsmiths, &c.	0.57	1.20	9.69	LII. Burmese and Chinese	2.79	12.53	20.68
XIX. Barbers	1.28	0.70	2.51	LIII. Western Asiatics..	0.04	0.42	45.50
XX. Blacksmiths ...	0.92	0.50	2.53	LIV. Mixed Burmese tribes	0.01	0.01	7.99
XXI. Carpenters and masons	1.13	0.97	3.97	LV. Indefinite Indian castes	1.08	1.40	5.94
XXII. Brass and copper-smiths....	0.11	0.20	8.43	LVI. Europeans	0.06	0.98	73.24
XXIII. Tailors	0.23	0.23	4.64	LVII. Eurasians	0.03	0.35	52.18
XXIV. Grain parchers, &c.	0.53	0.38	3.29	LVIII. Native Christians.	0.72	2.05	13.07
XXV. Betel-leaf sellers, &c.	0.09	0.13	6.80	LIX. Goanese, &c.	0.01	0.05	18.61
XXVI. Weavers and dyers	3.16	2.09	3.03	IX. Africans	0.01	0.01	3.18
XXVII. Washermen	1.02	0.24	1.08	Total races and miscellaneous	17.35	27.36	7.25
XXVIII. Cotton carders.	0.20	0.04	0.64				
XXIX. Shepherds, &c.	1.78	0.39	1.02				
XXX. Oil pressers ...	1.66	1.16	3.22				
XXXI. Potters	1.14	0.34	1.37				
XXXII. Glass and lac workers ...	0.05	0.03	2.56				
XXXIII. Salt and lime workers	0.54	0.15	1.29				

B.—Table showing the Stages of Instruction of Pupils in Public Schools for General Education, in 1892-93.

Stage.	Secondary Schools.		Primary Schools.	
	Boys.	Girls.	Boys.	Girls.
High	59,682	1,069	—	3
Middle	124,461	6,059	2,508	216
Upper primary.....	90,947	5,337	262,840	14,661
Lower primary, reading print...	153,990	18,192	1,690,838	172,206
" not reading } print..... }	23,704	4,585	649,494	98,058
Total	452,784	35,242	2,605,680	285,144

Note.—The figures quoted in the paper are those for 1891-92, as the later ones were not available till recently. The latter give the total number under instruction as 3,966,267, of whom 371,100 were girls. The arts colleges returned 13,387, and the professional colleges 3,344.

C.—Table showing the Proportional Distribution of Expenditure.

Head.	Expenditure from			
	Provincial Revenue.	Local Funds.	Municipal Funds.	All Sources.
{ Arts colleges.....	10·2	0·2	1·7	6·7
{ Professional colleges	7·0	0·1	0·2	2·5
Secondary schools	19·5	15·4	35·4	32·6
Primary "	15·7	55·3	43·9	31·5
Training "	5·2	2·0	0·4	2·1
Technical "	6·9	1·1	2·9	3·7
A. Total direct charges	64·5	74·1	84·5	79·1
University	0·2	0·1	—	1·8
Direction	3·8	—	—	1·0
Inspection.....	13·8	11·2	2·0	6·1
Scholarships.....	4·7	2·4	1·9	2·3
Buildings	10·3	8·4	7·2	6·7
Special furniture	0·7	0·9	0·7	0·6
Miscellaneous:	2·0	2·9	3·7	2·4
B. Total indirect.....	35·5	25·9	15·5	20·9
GRAND TOTAL.....	100·0	100·0	100·0	100·0

D.—Table showing the Average Cost of Educating each Pupil.*

Grade of Institution.	State Institutions.			Local Fund Schools.			Municipal Schools.			Aided Institutions.			Total.		
	Provin- cial.	Local and Municipal.	Total.	Provin- cial.	Local.	Total.	Provin- cial.	Municipal.	Total.	Provin- cial.	Local and Municipal.	Total.	Provin- cial.	Local and Municipal.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Arts colleges.....	161	1	238	—	—	—	20	12	87	40	5	154	67	3	157
Professional colleges	264	2	326	—	—	—	—	—	63	12	—	40	190	1	245
Secondary schools	12	4	33	—	5	8	1	8	19	4	2	24	4	3	22
Primary ".....	4	1	6	1	3	5	1	4	6	—	1	3	—	1	4
Training ".....	111	23	136	63	94	174	53	16	86	35	3	102	88	22	130
Technical ".....	52	3	71	18	37	111	5	49	58	18	8	74	35	6	67
Total	31	3	50	1	3	5	1	5	10	1	1	7	2	2	8

* The difference between the sum of the two first columns and the total under each head represents the cost paid from fees, endowments, &c.

E.—*Table showing the Expenditure on Public Instruction in 1892-93.*

Head.	Expenditure from					
	Provincial Revenues.	Local Funds.	Municipal Funds.	Fees.	Other Sources.	Grand Total.
I. Direct Charges.						
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Arts { English	877,867	9,853	23,270	669,311	489,997	2,070,298
Arts { Oriental	28,393	645	805	505	9,559	39,907
Professional { Law	3,123	—	—	85,542	6,367	95,032
Professional { Medicine	285,587	2,069	2,573	53,337	2,792	346,358
Professional { Engineering	270,020	—	—	21,058	1,090	292,168
Professional { Normal	32,739	—	—	80	426	33,245
Professional { Agriculture	26,075	—	—	496	4,053	30,624
A. Total University	1,523,804	12,567	26,648	830,329	514,284	2,907,632
For boys { High	863,070	211,677	221,084	2,932,992	1,040,451	5,269,274
For boys { Middle { English ...	355,389	229,093	212,487	892,522	747,323	2,436,814
For boys { Middle { vernacular ..	116,174	386,252	58,940	320,483	146,433	1,028,282
„ girls { High	186,834	157	5,730	385,702	300,876	879,299
„ girls { Middle { English ...	118,728	7,932	2,306	175,414	204,117	508,497
„ girls { Middle { vernacular ..	84,862	1,929	14,685	13,803	92,035	207,314
B. Total Secondary	1,725,057	837,040	515,232	4,720,916	2,531,235	10,329,480
Primary { boys	1,144,232	2,882,066	519,525	2,821,949	1,508,788	8,876,560
Primary { girls	248,167	132,197	119,326	61,235	535,692	1,096,617
C. Total Primary	1,392,399	3,014,263	638,851	2,883,184	2,044,480	9,973,177
D. Special and technical } training	1,071,952	172,238	47,945	133,937	417,893	1,843,965
E. Buildings and furniture	970,615	506,674	114,461	20,409	679,633	2,291,792
II. Indirect Charges.						
University	21,906	1,523	—	503,518	41,691	568,638
Direction	334,796	—	—	976	—	335,772
Inspection	1,224,273	611,635	29,018	12,250	54,643	1,931,819
Scholarships { Arts colleges	170,685	771	3,051	1,845	65,293	241,645
Scholarships { Professional colleges ..	42,134	1,255	1,162	—	9,222	53,773
Scholarships { Secondary schools ...	134,266	95,772	14,472	3,135	43,999	291,644
Scholarships { Primary „	15,564	18,470	3,237	1,026	13,518	51,815
Scholarships { Technical „	58,553	14,139	6,214	252	18,213	97,371
Miscellaneous	174,607	158,004	54,163	149,872	217,658	754,304
Total Indirect	2,176,784	901,569	111,317	672,874	464,237	4,326,781
GRAND TOTAL	8,860,611	5,444,351	1,454,454	9,261,649	6,651,762	31,672,827

Note.—Of the direct expenditure, Rs. 5,590,294 were spent on Government schools, &c.; Rs. 5,979,373 on local or municipal institutions; Rs. 1,030,314 on schools in native States placed under British inspection; Rs. 12,034,542 on aided schools, and Rs. 2,710,623 on unaided.

DISCUSSION *on* MR. BAINES'S PAPER.

MR. ROWLAND HAMILTON said that what Mr. Baines had brought forward most justly, was the enormous mass of the population and the extent to which we were out of sympathy and touch with the great mass of the natives. It was difficult for an English audience to realise that there were in India races differing from each other in every respect far more than did the nations in the whole of Europe. In his early days in India twenty-five years ago, the main idea was not to allow the native schools to fall into decay through want of support, but it appeared from the paper that English interference had not been judicious, and had failed to meet the real demand from those interested. It would seem that the Government native schools had been rather a temptation to fraud than any real assistance to the education of the people. Education, as they were all agreed, did not mean merely reading and writing; these were means to the end of carrying out moral and mental training in all directions. The three R's had been used in this country as a test, simply because they were capable of direct investigation and record. But the moral influences of our educational system (including specially the training colleges) had been directed towards this higher development, and he was satisfied that there were many indications which proved that these efforts had not been without effect. An instance of this in the East End of London had come to his knowledge quite recently with reference to the examination required before permitting children to proceed to labour. A large number drawn from various schools were brought together for this purpose. The masters were not present, but one of the most experienced of H.M.'s Inspectors assured me that he had been greatly struck, not only by the decent and orderly manner in which the boys came into the school room, took their places, and set themselves to work, but yet more by the absence of any attempt at "copying" from each other or any approach to such breaches of moral discipline. This instance is the more satisfactory, as the desire to "get a pass" in any way must have been strong with many of those under examination. He feared that some time would elapse before they could look for such signs of progress over the immense area of India, and the paper rather suggested that there had been a retrograde movement for strategical purposes. One point always appeared clear, and that was, that there should be in all the more hopeful districts at least one school accessible for those who wished to learn English. He hoped that the flagrant examples adduced by Mr. Baines would not be taken as indicative of the condition of the whole system of education. He (Mr. Hamilton) had taken part in three consecutive examinations in the Bombay University, and he had never heard any suspicion of unfair dealing. The entrance examination was

made useful merely as a test for the proficiency of lower schools, and although it was an anomaly, it was one which they were content to accept until some better expedient were devised for "leaving" examinations in the higher schools.

Sir JULAND DANVERS said he did not draw such discouraging conclusions from the paper as the last speaker had done, and he thought that there was a great deal in what had been said to encourage the hope that perseverance would lead to better results than had as yet been attained. It must be admitted that progress had been insignificant with the masses. The seed had been sown in a stubborn soil, but if properly fertilised good fruit would in time be brought forth. The future of India must, in a very large measure, depend on the way in which the population was trained, beginning with the higher and descending to the lower grades of the community. It had been very truly remarked that practical education began with the struggle for existence. In that struggle faculties were brought out which enabled people to judge for themselves what was best for their individual benefit. He should like to have heard something more concerning technical education and the efforts made to encourage industrial art. In certain castes and classes an inherited talent for art and design seemed to exist, but too many of those who took advantage of the school instruction provided for them, were apt to abandon their in-born faculties and to direct their efforts to obtain Government employment. This was a mistake, and it seemed to him that greater advantages to themselves and to the industries of the country would be gained if they could be induced, by a course of technical training, to apply their powers to particular crafts. He quite agreed that an awakening of the mind, so far as it had gone, had been brought about as much by the material improvement of the country as by any special efforts, and in this respect he looked upon the railways as most important factors in enlightening all classes of the community. They helped to promote inquiry, and to remove also the corruptions of the caste system. It has been found that when travelling, those who before considered themselves contaminated by the presence of a lower caste fellow creature, would abandon their caste feeling, and, preferring their pence to their professions, would use the cheapest class of vehicle on the railway. It was in fact found on inquiry that caste laws did not prohibit such association. The problem as to how the education of India can best be carried out was a most important one, and not easily solved. He begged to express his high appreciation of Mr. Baines's paper, which would aid the solution of the question, and was worthy of the accomplished author.

Mr. F. C. DANVERS said that, speaking generally, they must look on India as in a transitional state; and the circumstances of the country were so peculiar, that it would be absurd to compare the results with what were obtained in European countries. The system of education adopted seemed to him to have been based upon an European standard rather than upon an Eastern principle,

and an opinion had been expressed by an eminent authority that the system of technical education had rather tended to destroy than promote art in India. One of the great principles of education was to make people useful members of society, and it appeared to him, from the peculiar circumstances of India, that education could for some time to come only flourish in the large towns, and therefore that the great bulk of the population must of necessity be deprived of its advantages. The results had perhaps not as yet been all that might have been hoped for, but it might not unreasonably be anticipated that in the course of time the results of the examinations would take hold on the people, and stimulate education throughout the country.

Mr. A. K. CONNELL said that the difficulty of popular education in India seemed to him to be that there was on the one hand a Government which necessarily confined itself to secular education, and on the other a popular and to some extent indigenous system of education based on the religion of the country. He doubted whether it was anywhere possible to carry on popular education, producing moral as contrasted with purely mental results, without its being based on the religious ideas of the people. At the beginning of the century there had existed common hedge schools, which were largely nurseries for imbibing religious traditions and sentiments. The British Government could not influence the minds of Indian children when its own religious sentiments were quite different from those of the great mass of the people. Western ideas could not be brought to India in that way, and he feared that the Education Department of India, constituted on lines perfectly suitable to England, was out of place in India, because it was out of touch with the real heart and mind of the people.

Dr. MUAT feared that he could throw but little light upon the facts and inferences fairly deducible from them, contained in the very excellent essay of Mr. Baines. The different conditions of the question of popular education in India at the present time, as compared with the state in which he left them in 1855, when he had been for some years in charge, administrative and executive of the Department of public instruction in Lower Bengal, rendered it difficult for him to realise their full significance, without a more minute study of their details in each province and section of the Empire, than he had been able to bestow upon them. The few figures given were admittedly not intended to note progress, but to indicate the existing state and future prospects of indigenous primary schools in their social and other relations throughout the Empire. Of these he had no such acquaintance either from personal observations or a study of the ample published records regarding them, as to justify his forming or expressing an authoritative opinion on the issues raised by the writer. In addition he believed that we possessed no such knowledge of the inner lives of the natives of all castes and classes in the various nationalities under British rule, differing so very widely as they do

from each other, as to enable us to gauge with even proximate certainty the moral and national effects of the measures of instruction which are carried out by the State, or by private associations. He joined the education service some four years after the departure of Lord Macaulay from India, and the permanent adoption of the English language as the chief instrument of instruction in the college and schools placed under the control and direction of a newly created Council of Education. Among these the indigenous schools of the Lower Provinces of Bengal were not included, and although the study of the vernacular dialects of those provinces was by no means neglected or overlooked, the Council was in no way responsible for them, and had no mission to meddle with or mend them.

Both the secondary schools and colleges needed and obtained considerable changes in their management and courses of study, and the institution of universities completed the circle of progress contemplated many years prior to their sanction by the home authorities. In the celebrated despatch of 1854, the results of this progress generally in the institutions of the State, and of the leading missionary bodies, were embodied, and for the first time vernacular and primary institutions were assigned a leading position in the graduated original scheme of education then adopted. In the system of grants in aid also then sanctioned, all classes of schools were included, and so the schools and higher orders of teaching establishments promoted by the leading missionary bodies were brought into line for the first time with the department of public instruction under the immediate control and direction of the State.

It has been objected to this scheme of purely secular education, that it was ineffective as a moral and civilizing agency, inasmuch as it was not based upon the teaching of any form of religion in the Governmental or other institutions. Dr. Mouat was not disposed to accept this view, as the State was compelled to be absolutely neutral in the matter of religion. It was thus compelled to leave to each sect unfettered private action in its dealing with this difficult question, for reasons of policy which it would be out of place to consider in the discussion of the question under review. The despatch itself was the work of the Hon. Mr. Baring [then secretary to Sir Charles Wood, now Lord Northbrook], and many persons were consulted regarding it, among them Dr. Mouat himself. Moreover, it had been abundantly proved to be quite possible in any well considered school of secular education to inculcate the leading principles of morals, without offending any of the dogmas of Hindus, Musselmans, or Buddhists.

Among the other matters deserving of a passing notice, Mr. Baines had dwelt at some length on the question of caste, upon which he evidently believed that little or no influence had been exercised by education in India. It might be so among the great body of the people, but Dr. Mouat rather inclined to the view of Sir Juland Danvers, that its hold had been considerably weakened by railways, telegraphic communication, cheap postage, and the general advance in the active business of life, which attested the

progress generally of British India, as well as of the whole civilized world in the present century. There is, however, likewise much evidence in existence to render it probable that even the crucial test of Hindu marriages is quietly undergoing a change, which would become more and more evident in the near future. Rapid progress in such matters, and in most other domestic and social relations, cannot be expected in so extremely conservative a people as the natives of all parts of India; all measures calculated to break down the ancient barriers of isolation, if it be desirable to do so, must undoubtedly be based ultimately on the progress of education, on which so much light has now been reflected by such important labours as those of Mr. Baines and his coadjutors, and in particular by Sir William Hunter's Educational Report in 1882.

Regarding frauds in relation to schools, they are not altogether unknown in more advanced nations, and are scarcely of any serious consequence in estimating the value generally of the classes of institutions in which they have occurred. Dr. Mouat, when Secretary of the Council of Education, had to cancel the whole questionnaire of the senior scholarships of one year which had been tampered with, and to substitute a fresh series of questions, carefully printed in his own house under his personal supervision, to secure absolute secrecy prior to issue. Such a proceeding never recurred during his incumbency.

In the concluding remarks of Mr. Baines's paper Dr. Mouat concurred entirely, and he was of opinion that a more valuable work in a most important and difficult direction had never been accomplished than that of which a very small portion had that evening been under review.

Mr. BAINES, in reply, said that on the whole the views expressed in his paper seemed to be accepted. The question of the moral results of the present system of instruction was very important, and, to a greater or less degree, arose all over India. With regard to indigenous schools, two systems had proved successful in dealing with them: the first in Bombay, and the other introduced by Sir Thomas Munro into Madras; and he considered the latter to be the more successful of the two. Sir Thomas Munro was one of the greatest statesmen that India had known, and, in the matter of education, might be called the pioneer of the Peninsula. The system initiated by him was that those indigenous schools which began by teaching nothing but the Vedas or the Kuran, especially the Hindoo schools, should be gradually ameliorated and incorporated into the system of public instruction. The Madras Government had not established State primary schools to a large extent, but had adopted those already in existence, the masters being gradually induced to enter training colleges and to adapt their teaching to modern standards. In Bombay the indigenous schools were originally, he believed, in a much weaker state, and they were gradually supplanted by more efficient schools directly established by the Government. In the northern part of that Presidency, the trading classes had their own schools, teaching an elaborate system of accounts and book keeping, &c. He considered

the Bengal system of dealing with indigenous schools the worst. Almost all the instances of frauds which he had quoted were taken from the Bengal reports, and were traceable to the system of subsidising schools by grants in aid and excessive competition in a limited field of action. "Thousands of schools," said the Director of Public Instruction there, "sprang up every year to get the annual grant and disappeared after the examination." The indigenous schools spoken of by Dr. Mouat were mainly for the benefit of the Brahmans and the trading classes. He (Mr. Baines) divided schools into two classes, those devoted chiefly to scripture reading, and the secular classes, attended only by what were called the literary castes; and he could not, therefore, apply to either of these so wide a term as that of popular education.

The dissociation of morality from religion, which had rightly been mentioned, was of course a very delicate question. The Government was necessarily pledged to religious neutrality, and he did not see any prospect of improvement in the moral state of the younger generation of India simply by attendance at schools. The morality which really operated in every day life was that instilled and assimilated at home, and in after life the pupil would probably remember but little of the formal lessons learnt at school.

The idea of having a nucleus of English teaching in each district, as suggested by Mr. Hamilton, had been tried in some parts of India, but any efficient system would be very expensive. Englishmen were necessary as masters from the very beginning, otherwise the students only obtained a very superficial and imperfect knowledge of the language, which, in his opinion, was worse than none at all. Mr. Hamilton had also referred to university examinations as being free from the defects as regards fraud, to which the lower examinations were subject; but it must be remembered that the tests subsequent to matriculation were undergone by a comparatively small number of students, and these, again, had spent three or four years in college under stricter discipline. In the public service and other middle class examinations, he (Mr. Baines) had noticed frauds of various kinds by the candidates, and he feared that were it not for the stricter supervision possible in the case of smaller numbers, similar frauds would be practised in the university by unscrupulous pupils. He was speaking, it should be understood, of general tendencies, unrepressed by public opinion, not of a selected few. This was specially mentioned in the paper.

He had intentionally omitted all reference to technical education, his reason being that a distinction must be drawn between that and mere technical training. Schools of art and workshops were no doubt efficient as regards technical training, but technical education must be based on a good previous general education. A boy from a blacksmith's forge would, after a course in a training school, become a good blacksmith, and nothing else; but a thoroughly well grounded pupil, after a course of technical education, would be able to adapt himself to a variety of circumstances. The distinction was very finely drawn in the United States; the higher education which the boys in that country received in the

general schools was utilised in the technical schools, and under that system the boys did not develop on a single line, but were found to be efficient in whatever branch of industry they were afterwards placed. That was why the Americans were so much more efficient as mechanics than our Lancashire and other operatives. It had been said that no English operative could watch the working of a machine making more than 5,000 revolutions per minute, because the nerves would not stand it; but in America their nerves had been thoroughly trained, and the speed supervised had risen from 7,500 even to 13,000.

As regards the remarks about caste that had been made, he would be sorry to see caste disappear, because it was a force which binds together the community and prevented it from disintegrating too quickly. Railways had no doubt diminished the repugnance to the association of different castes, but there was not yet much difference at home. The main feature about caste was the marriage system it maintained, and this had never been relaxed. The caste system and the caste spirit were two different things, and the latter was a very important matter. For instance, in the army in many regiments they could not encourage clever low caste men to attain a rank above that of the unreceptive high caste men, for although the latter would obey on parade, as soon as the regiment fell out the low caste officer would have to place his hands on the feet of a Brahman, and real discipline under such circumstances was out of the question. There were several other points in the discussion to which he would have liked to have devoted a few words, but that he had already trespassed long enough on the courteous attention with which the audience had received his address, for which cordiality he, in conclusion, most heartily thanked them.

A cordial vote of thanks to Mr. Baines terminated the proceedings.

MODES of CENSUS-TAKING in the BRITISH DOMINIONS.¹ By REGINALD H. HOOKER, ESQ., M.A. (*Assistant Secretary to the Society*).

[Read before the Royal Statistical Society, 16th January, 1894.

ROBERT GIFFEN, Esq., C.B., LL.D., F.R.S., Hon. Vice-President, in the Chair.]

WHEN the two Acts of Union joining Scotland and Ireland to England were passed, much of the local government, as it existed in the three countries, was left unchanged, and each kingdom being now responsible for the management of its own Census, it happens that the methods adopted differ considerably from each other. Existing agencies are utilised as far as possible: thus, in England and Wales, and in Scotland, the registrars of births and deaths established throughout the country form a body of men ready to hand, but in Ireland the work is performed through the Royal Irish Constabulary. The information collected is also by no means the same. As regards the Colonies, each Government made such arrangements as seemed most suited to the requirements of the country. The smaller possessions did not attempt so elaborate a census as some of the larger ones; nor was there any necessity for minute details concerning a few thousand persons, or less. Generally speaking, all the colonies enumerated the population according to sex, age, birth-place, civil condition, and occupation, while some, taking advantage of the occasion to make an inquiry into the condition of industry in the land, collected agricultural statistics, &c.; subjects which we in England do not consider as forming part of the census at all. In India the conditions are entirely different to what they are anywhere else, and the methods employed in that dependency present very little resemblance to those adopted in the other parts of the British Dominions.

On the present occasion, as in 1881, the date of the census (5th April, 1891) was fixed by the Imperial Government for the United Kingdom and the Crown Colonies; the larger colonies also agreed to take theirs on the same date, although it was not always the most convenient. Only in India, Ceylon, Hong Kong, and

¹ In the preparation of this paper, I have to acknowledge the great assistance and many suggestions which I have received from Mr. Noel A. Humphreys (Secretary of the Census Office of England and Wales), Mr. J. A. Baines, C.S.I. (Census Commissioner for India), Mr. W. Scott (of the Colonial Office), and Dr. T. W. Grimshaw (Registrar-General of Ireland), and I am glad to avail myself of the present opportunity of returning my thanks to them.

Borneo was it found impracticable, for reasons which will be explained in the later portions of this paper, to take the census in the month of April.²

PART I.—*United Kingdom.*

Before making any preparations whatever for the Census, the Registrar-General must wait until the Act of Parliament authorising the Census is passed, for without this any expenditure incurred would not be recoverable. No authority has ever been given by Parliament to take the Census periodically, an omission which causes great inconvenience, as all the preliminary arrangements have to be completed at very short notice. In the present instance, the Acts (a separate Act is required for each of the three divisions of the United Kingdom) received the Royal Assent in August, 1890, and the Census was appointed to be taken on the night of the 5th April following, less than eight months afterwards.

Prior to this, however, Parliament, moved partly by the memorial addressed by the Council of this Society in 1888 to the Chancellor of the Exchequer and the President of the Local Government Board, had appointed a Departmental Committee³ to consider the whole question of the organisation, and what changes, if any, should be made in the scheme adopted in 1881. This Committee sat for the examination of witnesses (among whom were the Superintendent of Statistics at the General Register Office, London, and the Registrars-General of Scotland and Ireland) from the 21st February till the 24th March, 1890. The alterations made at the recommendation of this Committee were that the "occupations column" in the schedule was divided into three, in order that each person should state whether he or she was "employer," "employed," or "neither employer nor employed;" and that a return of the number of rooms occupied was demanded from all families living in less than five rooms. (These changes did not apply to Ireland.) It was also decided in Parliament that an enumeration of the Welsh-speaking population in Wales and Monmouth should be made. These constitute the only changes introduced in the Census of 1891, far more important recommendations of the Committee having been ignored.

The memorial mentioned above as having been forwarded by the Royal Statistical Society, was accompanied by a report drawn up by a committee, specially appointed by the Council of the

² In some outlying parts of Canada, also, the enumeration was not synchronous.

³ Consisting of the Right Hon. Leonard Courtney, Chairman, Sir Reginald Welby, Mr. C. A. Whitmore, Mr. Munro Ferguson, Sir Hugh Owen, Sir Brydges P. Henniker, and Mr. Charles Booth, with Mr. T. H. Elliott as Secretary.

Society in the preceding year. The suggestions contained in the Report were embodied summarily in the memorial as follows:—

“1. The taking of a Quinquennial Census.

“2. (a) The passing of the Census Act at an earlier date than “has hitherto been usual.

“(b) The passing of a permanent Act for a Quinquennial “Census.

“3. The appointment of a separate Census branch in the General Register Office.”

These suggestions were all included in the recommendations of the Parliamentary Committee, excepting that which urged that the Census Act should be passed at an earlier date, but it was then too late to consider that clause. No action in regard to these proposals was taken by the Government.

England and Wales.

Historical.—The first English Census, taken in 1801, included the number of persons and families, distinguishing the sex, and the number of houses—inhabited and uninhabited. The occupations were given roughly in three classes: (1) persons chiefly employed in agriculture, (2) those chiefly employed in trade, manufacture, handicraft, and (3) all other persons. In 1811 the number of houses being built was included, and the number of families engaged in the above occupations was given, instead of the number of persons. In 1821, a return as to ages was made, but it was not obligatory, and in 1831 it was dropped again, although cognisance was taken of the number of persons over and under 20. On the other hand, in 1831, the occupations were divided into seven heads, and the areas of the parishes were given for the first time. In 1841 (when the newly introduced Registrars were for the first time employed), the ages return was made obligatory, the birth-places were recorded, and the occupations were all arranged, according to the householder's statement, alphabetically. In 1851 Dr. Farr introduced the present classification, in which the occupations are divided into six classes, containing 18 orders. This principle has, with some modifications, been since maintained, but there are now 24 orders, as follows:—

Class I. Professional.	1. General or Local Government of the Country.
(<i>Andrici</i>)	2. Defence of the Country.
	3. Professional Occupations.
„ II. Domestic.	4. Domestic offices or services.
(<i>Oikici</i>)	
„ III. Commercial.	5. Commercial Occupations.
(<i>Agorici</i>)	6. Conveyance of Men, Goods, and Messages.
„ IV. Agriculture and Fishing.	7. Agriculture.
(<i>Georgici</i>)	8. Fishing.

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| Class V. Industrial. | 9. Books, Prints, Maps. |
| (<i>Technici</i>) | 10. Machines and Implements. |
| | 11. Houses, Furniture, and Decorations. |
| | 12. Carriages and Harness. |
| | 13. Ships and Boats. |
| | 14. Chemicals and Compounds. |
| | 15. Tobacco and Pipes. |
| | 16. Food and Lodging. |
| | 17. Textile Fabrics. |
| | 18. Dress. |
| | 19. Animal Substances. |
| | 20. Vegetable „ |
| | 21. Mineral „ |
| | 22. General or Unspecified Commodities. |
| | 23. Refuse matters. |
| „ VI. Unoccupied. | 24. Unspecified Occupations. |

Two fresh columns were also added to the schedule in that year, the first for the relationship to the head of the house of the individuals returned in each schedule, and the second for the infirmities. In that year also the Scotch Census was for the first time dissociated from the English. The schedule has since undergone but very little alteration. Two changes have been introduced in 1891, the first being the inquiry as to tenements, while the second is the sub-division of persons engaged in occupations into “employers, employed, or working on own account:” this distinction is due to our President, and has been very generally adopted in the larger colonies.

The Enumeration.—The organisation for the collection of the data has been shortly described by Dr. Ogle (Superintendent of Statistics at the General Register Office) as follows:—

“As regards the old censuses up to 1841 the collection of the data in the country was made by the overseers, but in 1837 the General Register Office was established, and an organisation having been set up that extended over the whole country, this was made use of for the purpose of the census and has been so ever since. For the purpose of registration, the whole of England and Wales is divided out into 600 or 700 registration districts, which are practically the poor law unions, and in each of these there is a superintendent registrar resident, who generally, almost always, is the clerk of the board of guardians. Each of these registration districts is cut up on an average into three or four sub-districts. There are some 2,300 of these altogether in England and Wales, and in each there is a resident registrar whose business it is to register births and deaths. That is a permanent organisation for registration purposes; and this organisation has been made use of since 1837 for the purpose of taking the census. When a census is going to be taken each of those 2,300, or thereabouts, registration sub-districts is cut up

“into enumeration districts, of which there were at the 1881
 “census somewhere under 40,000 in the whole of England and
 “Wales, each of these being put into the hands of an enumerator,
 “of whom consequently there were also about 40,000, and these
 “40,000 enumerators, 2,300 registrars, and 700 superintendent
 “registrars, constitute the entire organisation in the country for
 “the collection of the data.”⁴

In 1891, the actual number of registration districts was 633, of sub-districts 2,110, and of enumerators 35,507. These enumerators were selected by the registrars. By the Act, the overseers of the poor and the constables or other peace officers in every parish, and the relieving officers of every poor-law union, were bound to act as enumerators, if required to do so, and they were accordingly generally chosen. Some idea of the average number of houses and persons to an enumerator may be gathered from the following:—

	Average to each Enumerator.		
	Area.	Houses (inhabited).	Persons.
	Acres.		
England and Wales	1,051	154	817

Between January and the middle of March, accordingly, each registrar was required to select properly qualified⁵ persons to act as enumerators in the district which he should assign to them; changes in the area of many districts had to be considered and allowed for, the schedules⁶ had to be prepared, &c., &c.

The schedules were delivered by the enumerators at every dwelling house on or before the Saturday preceding the census day. They were filled up by the householder, who included therein the particulars concerning every person who was in the house at midnight of the 5—6th April. The enumerator collected all the schedules within his district on the Monday morning, verifying that they were properly filled in, and, if any of the householders were incapable of doing so, writing in the returns himself from their dictation. Another part of his duty was to take an account of the houses, specifying whether they were inhabited, building, or

⁴ Report of the Census Committee (Parliamentary Paper C-6071), “Minutes of Evidence,” p. 1.

⁵ The enumerators are to “be intelligent, trustworthy, active, write well, have some knowledge of arithmetic, not to be infirm or of weak health; they must not be under 18, nor older than 65; must be temperate, orderly, and respectable, and be such persons as are likely to conduct themselves with strict propriety and civility in the discharge of their duties.”

⁶ Specimen schedules will be found at the end of the paper.

uninhabited. He then copied the returns into his "enumeration book," and delivered it, together with a summary, to the registrar, who passed it on, with the others from his district, to the superintendent registrar, and the latter again transferred these to Somerset House, or rather to the temporary iron building (the "Census Office") in Charles Street, Westminster. Travellers were enumerated on the Monday morning, on their arrival at their destination. The population on rivers, canals, &c., and those sheltering in barns or passing the night in the open air were usually taken by the ordinary enumerators, but in some cases special officials were appointed.

Tabulation.—The Preliminary Return, published in the following June, is based on the summaries furnished by the enumerators, after they have undergone local inspection. The different facts contained in the enumeration-books are afterwards transferred to the tabulation-sheets, of which there are several kinds—one for ages and civil condition, another for birth-places, a third for occupations, a fourth for infirmities, &c. Each sheet contains the particulars for an area which can be used as a unit for all purposes; this district may be fairly large, or it may be very small when it is, for instance, a portion of a parish situated in one registration county but in a different administrative county. The sheets are divided into compartments so arranged as to receive the particulars in the same form as will be given in the printed volumes. The "birth-place sheet," for instance, contains separate compartments (each of which is sub-divided into two, for males and females) for those born in each county, foreign country, or at sea, for those whose birth-place is not stated, &c. A tick is accordingly made in the proper compartment corresponding to each individual's birth-place, and the totals of these ticks show, in a form ready for publication, the birth-places of all the persons living in the district. Birth-places and infirmities are comparatively simple, and the same sheet can be used for males and females. The ages and civil conditions are combined on the same sheet, but separate sheets are required for males and females; the former are, for convenience, printed in black, the latter in red. Ages and occupations are combined in a similar manner. The totals of the proper sheets can then be added together to form county-totals, and so on. It is, I suppose, needless to add that the work is constantly and carefully checked at every stage.

The staff at the central office included 40 second division clerks, 47 temporary clerks, 13 boy clerks, and 54 boy copyists, exclusive of the Secretary, superintending staff, and 2 "tabulators."

In **Scotland** the arrangements were very much the same as in England, the work being done through the Scotch Registrar-

General's Office. One difference is that the superintendent registrar is replaced by the Sheriff of the County. The staff required was of course far smaller, there being 1,050 registrars and 8,926 enumerators. This gives an average, to each enumerator, of 2,135 acres, 92 houses, and 462 persons. The parcelling out of the country into enumeration districts of convenient size was, as in England, entrusted to the local registrars, subject to the sanction of the Sheriff, and in the case of large institutions, such as prisons and workhouses, the governor or master was appointed enumerator, this also being the case in England.

The Scotch and English schedules are so nearly identical that I have not judged it necessary to reproduce both. The only difference is that the two columns in the English form for "sex" and "age" are, in the Scotch, replaced by two others, both with the heading "age and sex," the ages of the males being placed in the first column, those of the females in the second.

On the back of the schedule are the instructions to householders (they are particularly minute in regard to occupations), examples of the mode of filling up the householder's schedule, and the much smaller schedule concerning the house to be filled in by the enumerator. In the Scotch, two more spaces are set apart for the particulars of the house than in the English; one is for the "registration district," and the other for the "number of rooms" "with one or more windows."

In Ireland the Registrar-General controls the whole undertaking, but the actual enumeration is performed by the Royal Irish Constabulary. There are rather more than 200 constabulary districts in Ireland, over which are placed District Inspectors. When the Census is to be taken, these inspectors subdivide their districts into convenient areas, and members of the Constabulary are appointed to act as enumerators in these districts. In Dublin, the census is taken by the Metropolitan police. The Irish enumerating staff is stated to be much better than the English, not only because the men all belong to a regularly disciplined body, but also because many of them are employed every year in collecting agricultural returns, so that they have had considerable training in the collection of statistical data. There were in 1891 210 districts (of which 6 were in Dublin); 4,006 of the enumerators were members of the Constabulary, and the remaining 150 belonged to the Dublin Police. The average area of each enumerator's district was 4,860 acres; he had to visit 210 houses, and recorded 1,132 persons.

Each Irish enumerator prepared a summary of his schedules, which was forwarded to the Registrar-General, as in England, and from these summaries the preliminary returns were printed.

The original schedules (printed on much stouter paper than the English) were also all sent up to the Registrar-General, and the tabulation of the results is made directly from the originals.

An unexpected difficulty arose on this last occasion in returning the schedules, owing to an epidemic of small-pox which broke out in the north of Ireland while the Census was in progress, and arrangements had consequently to be hurriedly made to disinfect the schedules before they could be abstracted. The precautions taken proved effectual in preventing the further spread of the disease through this means.

Cost of the Census.—By employing the constabulary in Ireland, the local expenditure, *i.e.*, the pay of the enumerators, &c. for the collection of the data, is greatly reduced, for the only expense incurred under this head is the extra pay, fixed by the Treasury, and allowed for extra duties for a certain number of hours' absence from barracks, and for going certain distances outside their sub-districts, or being kept out all night. This expense is paid by the Registrar-General, and appears in his vote. The local expenditure was thus 0·21*d.* per head in Ireland, as against 0·76*d.* per head in England, and 1·31*d.* in Scotland.

The in-door staff, at the Census Office in Dublin, consisted of 80 male clerks, 10 female clerks, and 100 boy copyists, with the addition of 50 taskworkers and some members of the staff of the General Register Office. These are the maximum numbers that were employed at any one time; as the work progressed the staff was reduced. This, it will be seen, was not only relatively but actually a much larger staff than was at the disposal of the English Registrar-General, and was no doubt a material factor in bringing out the complete census some considerable time before the English and Scotch. The work in Ireland was completed and the office closed on the 30th June, 1892: the English Census Office was closed on the 30th November, 1893. In comparing the two, however, it must be borne in mind that, on the one hand, the Irish Registrar-General had to tabulate the religions, education, and sickness returns, and on the other, that the greater complication of areas in England and Wales entailed an enormous amount of extra labour.

Cost of the Census, 1891.

	England and Wales.	Scotland.	Ireland.
	£	£	£
Local expenses	92,000	22,000	4,150
Central office	28,000	8,000	14,350
Total	120,000	30,000	18,500

Differences between the Scotch and English Censuses.—

Some of the chief differences between the Scotch and English censuses, *e.g.*, the number of windowed rooms in each house, returned in Scotland, have been noticed above. But the term "house" has itself a different signification in Scotland. What are known in England as "flats" would in the Scotch returns be counted as so many houses, while in the English it is only the building which is counted as a house, however many flats it may contain.⁷ Beyond the border, statistics are given of the number of families occupying houses of different sizes: in England we only demand particulars of tenements, and give details of the number of families occupying one, two, three, or four rooms. One great difficulty was not experienced in Scotland, at least not to the same extent as in England, namely the confusion of areas. This will be considered later.

Differences between the Irish and English Censuses.—

The Irish returns differ very materially, both from the English and the Scotch; the most important point of all being with regard to the religions, to which a column is devoted in the Irish schedule. Each individual there is required to indicate the particular church or denomination of which he is a member; but, in publishing the returns for the smaller divisions of the country, the inhabitants are grouped as Roman Catholics, Protestant Episcopalians, Presbyterians, Methodists, and "all others." This return is now optional, but it was only made so for the first time in 1881, having previously been obligatory. Very few people have availed themselves of the "conscience clause;" the total of all persons refusing information under this head in 1881 was only 530, and, in 1891, 871. This is a notable increase, not far from double, when we remember the decline in the whole population. It seems open to doubt whether it is generally known that the return as to religion is voluntary (even though the fact is mentioned in the instructions on the back of the schedule).

Another important difference is the education statistics which are given in Ireland but not in England, and only partially in Scotland. The Irish make a return of the number of persons able to read and write, and also of the number in receipt of education, whether primary or secondary. The Scotch census includes a return of the number of children being educated.

⁷ Definitions of a house:—

England:—"All the space within the external and party walls of a building."

Scotland:—"Every dwelling (1) with a distinct outside entrance from a street, court, lane, road, &c.; or (2) with a door opening into a common stair."

Ireland:—"Every dwelling which has a distinct outer door, although it may be occupied by several families living in separate apartments, or what are known as tenements, under the same roof."

The English and Scotch censuses give particulars of the blind, deaf and dumb, mentally deranged, and idiots, but in Ireland a census is also taken of those who are afflicted with "temporary" diseases (including incurable diseases). The figures are given separately for those treated at home and those in hospital. There can hardly be much doubt as to the reality of the sickness of the latter, but in the case of persons treated at home, the results may seem more doubtful, since the term "sick" is vague. But by means of a subsidiary question, the Irish Registrar-General has succeeded in reducing the error from this cause to a minimum; each person being required to state whether his illness was such as to disable him from following his ordinary occupation. It appears that of 16,466 treated in their own homes, only 307 were able to carry on their usual employment. This result appears to define "sickness" with quite sufficient accuracy: it being thus generally understood to imply disability to follow the usual occupation. It is not difficult to conceive of cases where a person may be seriously ill, and yet able to do his work: these cases would probably account for a large proportion of the 307.

Though not, strictly speaking, part of the census, the opportunity was taken to make a special inquiry in 1891 regarding agricultural holdings, "classified according to rateable valuation, "population, houses, &c., in each class, also the number of holdings "according to size." The agricultural statistics, the number of births, marriages, and deaths, during the decennium, and the tables of emigration, which are appended, can hardly be considered peculiar to the Irish Census, as they are merely summarised from the annual returns.

The returns as to the density of the population are much more complete in the Irish Census. Since 1841, according to a system devised by Sir Thomas Larcom and used ever since, the houses have been divided into four classes. The lowest or fourth class includes most single-roomed houses (mud cabins, &c.), the third class house has from two to four rooms and windows, and the second class house is, in the country, a good farm house, or, in the town, a house with from five to seven rooms and windows. Better houses than these constitute the first class. The *accommodation*—also divided into four classes—depends on the number of families in a house: all families living in fourth-class houses are said to occupy fourth-class accommodation; but all in first-class houses, containing more than five families, are equally said to occupy fourth-class accommodation, so that the degree of accommodation to a certain extent represents the crowding.

On the whole, comparing the three great divisions of the United Kingdom, it appears that there is very little in the English

and Scotch censuses which is not to be found in the Irish, while there is a great deal in the latter (especially the religions, education, and land-holdings) which might usefully be adopted on this side of St. George's Channel, where, the numbers being much larger, any deductions drawn would be far more accurate.

To the above broad statement there is one important exception. Though not included in the Census returns, the decennial statistics of mortality according to occupation, worked out first by Dr. Farr, and in 1881 by Dr. Ogle, are amongst the most suggestive of the results of the census. The English figures on this subject are the earliest of any consequence, by many years, and England is now far ahead of other nations in this branch of statistics. Possibly the Scotch and Irish populations are not large enough to afford trustworthy deductions.

Areas.—The tabulation of the results is immensely complicated by the want of a system of uniform boundaries. The variety of areas is a great inconvenience in Scotland and Ireland (especially in the latter); but it is in England and Wales that the chaos is most complete. Until a few years ago, there were in England and Wales two kinds of counties, the old *geographical* and the *union* or *registration*, the first being at present used for a few very minor purposes (for which the other area would be equally convenient), and being of little more than sentimental interest. When the Local Government Boundaries Commission was appointed in 1888, it was expected that the areas would be simplified, but the Commission left the older boundaries untouched, and established a completely new set of counties, so that there are now *three* different kinds. In fourteen instances, these new *administrative* counties coincide with the registration county. They are not necessarily made up of parishes (either ecclesiastical or civil—two totally different areas in many cases), but one parish may be in two or more counties. Some notion of the confusion may be gathered from a statement of all the different areas for which the population is given separately:—

England and Wales.

54	Ancient counties	633	Registration districts
468	Parliamentary areas	2,110	„ sub-districts
303	Municipal boroughs with their wards	1,011	Urban sanitary districts
62	Administrative counties	575	Rural „
64	County boroughs	14,684	Civil parishes
732	Petty sessional divisions	2	Ecclesiastical provinces
11	Registration divisions	34	„ dioceses
55	„ counties	13,780	„ parishes ⁸

As things at present are, we do not know what is meant by the term *county* or *town*. For instance, the *administrative* county

⁸ "Census of England and Wales of 1891. General Report," p. 2.

of Middlesex has 560,012 inhabitants, whereas the *registration* county has 574,999, and the *ancient* county 564,400 (exclusive of parishes now forming part of the county of London). Tables are accordingly also given to explain the difference between the administration and registration counties, and between the administration and ancient counties. The following is an example of the former, Middlesex again being taken:—

*Difference between the Registration Counties and the Administrative Counties of Middlesex.**

Number of District and Sub-district.	Civil Parish.	Area in Acres.	Houses.			Population.		
			In-habited.	Unin-habited.	Build-ing.	Males.	Females.	Persons.
	MIDDLESEX.							
	Registration County Districts, 124—129.....	178,754	97,894	6,641	1,590	268,776	306,223	574,999
	Add parts of Administrative Middlesex included in other Registration Counties (a)....	4,565	3,573	249	26	8,159	10,093	18,252
	Deduct parts of other Administrative Counties in Registration Middlesex (b)	183,319	101,467	6,890	1,616	276,935	316,316	593,251
	<i>Administrative County of Middlesex</i>	34,273	6,379	322	70	16,015	17,224	33,239
	(a) Parts of Administrative Middlesex in other Registration Counties. In <i>Surrey</i> .	149,046	95,088	6,568	1,546	260,920	299,092	560,012
39-4	Hampton	2,036	1,181	88	3	2,617	3,205	5,822
"	Hampton Wick	1,315	457	21	12	1,041	1,337	2,378
"	Teddington	1,214	1,935	140	11	4,501	5,551	10,052
	Total to be added.....	4,565	3,573	249	26	8,159	10,093	18,252
	(b) Parts of other Administrative Counties in Registration Middlesex							
	Of <i>Herts</i> .							
128-1	Elstree	1,508	160	6	1	386	419	805
"	Shenley	4,090	313	8	1	707	718	1,425
"	Ridge.....	3,615	99	4	—	222	237	459
"	South Mimms, <i>part of</i>	85	590	43	3	1,307	1,512	2,819
128-2	Monken Hadley	649	238	23	1	543	759	1,302
"	Chipping Barnet	1,488	792	73	7	2,189	2,374	4,563
"	East Barnet	1,699	913	61	21	2,404	2,724	5,128
"	Totteridge	1,605	109	1	—	246	539	785
129-4	Enfield, <i>part of</i>	37	55	—	—	150	117	267
129-6	Cheshunt	8,480	1,960	67	28	4,754	4,866	9,620
	Of <i>Essex</i> .							
129-5	Waltham Abbey	11,017	1,150	36	8	3,107	2,959	6,066
	Total to be deducted.....	34,273	6,379	322	70	16,015	17,224	33,239

* "Census of England and Wales, 1891," vol. ii, p. 268.

The inconvenience is almost greater as regards the towns, as the difference in the population is sometimes very considerable. *Town* may mean the *urban sanitary district*, the *municipal borough*, the *county borough*, or the *parliamentary borough*. Generally, the urban sanitary district is meant, if the "town" is large enough, it may also be a municipal borough, and still more important towns are also county boroughs. In these cases the area and population are the same. But the parliamentary borough is quite another thing. In some cases the two areas do coincide, but in others they do not. The following are examples of differences selected at hazard :—

	Urban Sanitary District.		Parliamentary Borough.		Difference.*	
	Area.	Population.	Area.	Population.	Area.	Population.
	Acres.		Acres.		Acres.	
Bath	3,382	51,844	3,455	54,551	— 73	— 2,707
Bolton.....	2,357	115,002	2,504	118,730	— 147	— 3,728
Brighton.....	2,529	115,873	3,715	142,129	— 1,186	— 26,246
Burnley.....	3,923	87,016	3,981	86,034	— 58	+ 982
Canterbury.....	3,971	23,062	3,834	22,710	+ 37	+ 352
Manchester.....	12,911	505,368	7,910	454,509	+ 5,001	+ 50,859
Wolverhampton	3,525	82,662	18,738	174,365	— 15,213	— 91,703

* + indicates that the urban sanitary district is the greater.

— that it is the smaller.

Two volumes are required to give the statistics of the various counties, petty sessional divisions, ecclesiastical divisions, and minor districts of all sorts, together with explanations of the differences. The differences in the areas are, in the great majority of cases, extremely small; there should therefore be no difficulty in adjusting the boundaries so that the same area should serve for municipal, parliamentary, civil, and ecclesiastical purposes. A considerable saving would thus be effected in the labour and cost of the census. There were in the intercensal decennium over 10,000 alterations in boundaries, made with the object of simplifying certain areas, to be taken into account, but as such alterations only applied to one kind of parish (for instance), the other divisions remained unaltered, and the authorities sometimes succeeded in creating a new area in addition to the old. As Dr. Ogle remarked when examined by the Parliamentary Committee in 1890: "In the Census of 2001 A.D., these changes may "have simplified matters, but at present they complicate matters "very largely."⁹

⁹ "Report of Census Committee, 1890." Question 211.

I quote the following as illustrating the ignorance of local authorities on this point:—

“A curious instance may be cited of the strange idea held by some local authorities as to their power to alter the boundaries of areas when such suits their convenience, without any Act of Parliament or Order of Local Government Board whatsoever. A change of certain parish boundaries had been made under the Divided Parishes Act, and as this change would have led to some confusion unless accompanied by corresponding changes in other areas, sanitary and ecclesiastical, the various local authorities concerned met together, decided that the new line of boundary should ‘stand for all purposes,’ and drew up a formal document to that effect, which was duly stamped and signed by the various representatives.”¹⁰

Now this is just what ought to be done: when a parish is altered for one purpose, the new line of boundary should stand for all purposes. (I do not mean to imply that the *local* authorities should have power to make such alterations at will.)

In *Scotland*, the difficulties are not so great; the civil parish is an unit on which all the calculations are based. A change in the direction of simplifying the boundaries is already in operation, under the provisions of the Local Government (Scotland) Act, 1889, which had for its purpose—

“To amend the Laws relating to Local Government in Scotland; and for the simplification of certain areas, which was necessary for the proper carrying out of the Act, a Boundary Commission for Scotland was instituted, and was required to frame orders dealing with ‘Counties, Burghs, and Parishes, and detached parts of Counties and Parishes,’ so that each Burgh and Parish, if the Commissioners shall in the whole circumstances of the case deem it necessary or expedient, may be within a single County, and that no part of a County or Parish be excluded therefrom.”

Here also a few parishes still remain situated in more than one county, but a large number of boundary orders have now been made, nearly all of them subsequent to the publication of vol. i of the Scotch Census, so that there was necessitated a supplementary volume of 150 pages, giving the areas and populations of the new parishes. It requires however special authority to alter the registration districts so as to coincide with civil parishes; and parochial boards, &c., who desire such a readjustment must petition the Sheriff of the County. That such an alteration should have been undertaken in Scotland seems to argue that there is no insurmountable difficulty in introducing the change elsewhere.

¹⁰ “Census of England and Wales, 1891. General Report,” p. 3.

In *Ireland*, also, matters are somewhat simpler, as there also there is one fixed unit—the *townland* (except for the townships). But the same inconveniences arise in Ireland and Scotland from the different varieties of towns.

The confusion arising from this cause was aptly illustrated when the preliminary return of the Census of Ireland was published. According to that return both Dublin and Belfast could claim to be the largest city in Ireland, the first in respect of the population within the boundaries of the parliamentary borough, the latter in respect of the greater number of inhabitants within the limits of the urban sanitary district. But the final return shows that Belfast has the greater population, whichever boundaries be taken.

PART II.—*India and Ceylon.*

(a.) *India.*

The population of India is, probably in every single respect, the most difficult in the whole world to enumerate, owing to the enormous number of the people, the variety of races, the comparative illiteracy of the masses, the suspicions of the wilder tribes, the different susceptibilities of the various religious sects, &c., &c., all of which require to be taken into account. Mr. J. A. Baines (Census Commissioner for India) has himself clearly explained these difficulties in the paper read before the Society of Arts in June last year.¹¹ They apply more or less to every branch of the investigation, and the number of precautions to be taken is therefore almost incredible. As a consequence, census-taking in India is a totally different affair to what it is in England. Even the simplest operations cannot be performed without special arrangements. In the United Kingdom, the enumerator leaves a schedule at each house, and collects them all the next day; such a method would be absolutely impossible in India. It was even found impracticable to hold the census on the same day as here, so that India and its dependencies, with Ceylon, Hong Kong, and a few outlying parts of some colonies, form the only part of the Empire in which the census was not taken on the 5th April. The principal reasons for this are climatic: the hotter weather having already commenced by that date, the difficulty of the operations would be considerably increased. Another reason is that the natives are more generally at home earlier in the year (except at the time of

¹¹ Journal of the Society of Arts, 10th June, 1892.

the full moon, when they are wont to make short pilgrimages). The date of the census was accordingly fixed for 26th February.

Historical.—The first general attempt to enumerate the whole population of India was in 1871-72 (it was not synchronous). But it was by no means complete, since the Punjab, Oude, and Berar were omitted, it being deemed inadvisable to disturb the people so soon after the recent censuses which had been taken in those districts. Earlier provincial censuses had been taken in the North-West Provinces in 1853 and 1865, in Oude in 1869, in the Punjab in 1868, in the Hyderabad Assigned Districts in 1867, and in the Central Provinces in 1866. In Madras, quinquennial returns had been prepared since 1851-52. There was also an annual census in British Burma for the purpose of the capitation rate, which is stated to have been “tolerably correct.”¹² But censuses were known in the Island of Bombay long previously; one is even mentioned as having been taken in 1716. Another was taken in 1814-15, and attempts, which appear to have been complete failures, were made in 1833-34, 1849, 1851 (twice), and 1861.¹³ The first satisfactory census of the island is that of the 2nd February, 1864; the schedule contained space for the name, relationship to head of house, sex, age (as near as known: for infants under one month the age was to be written in days; under two years, in months; and above two years the age last birthday, without fractions), race or caste, occupation, birthplace, and infirmities (insane, dumb, blind, or lame). From the Report on the Census of the 1st January, 1853, of the North-West Provinces it appears that a previous, but unsatisfactory, enumeration had been made in 1847. The inquiry of 1853 extended to the area of the land under cultivation, the amount of the assessment, and the population by sexes; the only sub-division of the people being into Hindoos and others, and of both these classes into agricultural and non-agricultural. The Census of 1871 took account of the sex, age (under and over 12 only), caste, religion, occupation, education, and infirmity. The Census of 1881, the first synchronous enumeration of all India, added inquiries as to the ages, civil condition, and language.

In Rajputana, Haiderabad, and some minor feudatories there had been no previous census to that of 1881, so that the comparisons to be drawn concerning the two largest native States are quite new. On this occasion the population enumerated for the first time is much smaller: Upper Burma and Kashmer being the principal acquisitions of the Census Commissioner.

Administration and Enumeration.—“The results of the

¹² Census of India, 1871-72, p. 1.

¹³ „ the Island of Bombay, 1864, p. 1.

“ census are shown by political and administrative divisions, “ on which some explanation is necessary before discussing the “ statistics in detail. The first subdivision is into British and “ feudatory territory. The former is the dominion of the crown, “ under the sole administration of the British Government, and “ contains 62 per cent. of the area, and 77 per cent. of the “ population now dealt with in connection with the census. The “ remainder is under the rule of the native chiefs, subject to “ the advice and control of the British Government, in its capacity “ of paramount power, and includes 38 per cent. of the area and “ 23 of the population. The higher proportion of the area in this “ category is due to the inclusion in some of the States of wild “ tracts like the Himalayan regions of Kashmer, the desert portion “ of the Indus valley, and nearly all the forest covered hills of the “ central belt.”¹⁴

The Government has only political or diplomatic connection with the native States, and the census was therefore not compulsory in those parts of the country. But the British Political Officers represented to the native rulers the great advantages of taking a census, with the result that they all gave their consent to an enumeration. The inquiry, however, was not necessarily so extensive as in British territory, though in most States the general schedule was adopted, and in all, the returns which were collected were made in the same manner as in the British provinces; this was insisted upon.

The whole census was placed under a *Commissioner*, appointed in August, 1889, under whom, in the following April, *Superintendents* were placed in charge of each province, large agency, or more than one small agency. These superintendents were sixteen in number: nine for the provinces (including one for Berar), and seven for the feudatory States. In the case of Calcutta, the municipality preferred to act independently of the Bengal administration, and took the census themselves, though the schedules and tables were the same as elsewhere. The cost (of which the Government bore half) was very considerable compared with that in the other parts of the empire. In Bombay the municipality voluntarily placed themselves under the superintendent for the province, and paid half the expenses. The *districts* of which the provinces are made up, and in which the operations were under the control of the *collector*, were divided into *charges*, or *sub-charges*, under the orders of a *charge superintendent*. These charges usually corresponded in area to the revenue-, or, in Bengal, the police-, administrative subdivision, and their superintendents were

¹⁴ Census of India, 1891: General Report, p. 15.

usually the revenue officer or inspector of police. Under these again were the *supervisors*, who had control over the *circles*—usually consisting of perhaps half a dozen or fewer villages. A single village, if it were large enough, or a portion of a town, would, however, form a circle. “The functions of a supervisor “were only in a very minor degree executive: he was almost “exclusively a trained centre of information”¹⁵ in every circle of a varying number of houses. Finally, the lowest official was the *enumerator*, whose duty it was to fill in the schedules for each *block* of houses, the idea being that each block should contain not more than 50 houses. A family consisting usually of about 5 persons, the enumerator had thus not more than 300 persons to deal with, as a general rule. With some exceptions, each block was entrusted to a single enumerator, and each circle to a supervisor.

In Bengal, the following were the proportions existing between the various divisions. In the other provinces the figures differ considerably, and it must be remembered that Bengal, besides having by far the largest number of inhabitants, is also one of the most thickly populated provinces.

Number of <i>districts</i> (excluding Calcutta)	48	
„ <i>charges</i> (including sub-charges)	1,818	
„ <i>circles</i>	26,946	
„ <i>blocks</i>	378,187	
Average number of <i>houses</i> in block	36	
„ „ circle	512	
„ „ charge	5,923	
Number of <i>enumerators</i> : Hindu.....	241,478	} 324,645
„ „ Musulman	79,180	
„ „ Others	3,987	
„ <i>supervisors</i>	26,507	

It will thus be seen also that in Bengal there were on the average about 14 blocks in a circle, 15 circles in a charge, and 38 charges in a district.

The number of enumerators required for the whole of India was just under one million. There was considerable difficulty even in securing these, as in the entire country the percentage of males who can read is only 11. The method adopted in the actual enumeration was the same as in 1881; the schedules were filled up, for the habitual residents, some four or five weeks before the census in the country, and ten or fifteen days before it in the towns, and the results simply brought up to date on the night of the 26th February, by including any changes which had taken place since the schedules were first filled in. By this means the enumerator was enabled to collect the schedules for a population, roughly

¹⁵ Census of India, 1891, vol. iii (Bengal), p. 9.

speaking, of 300; whereas, had it been attempted to do the whole work in a single night, the greatest number of schedules that could have been collected, by any one enumerator, would have been perhaps a dozen. So much time was consumed in explaining to the householder exactly what information was required from him. The ordinary method would have demanded some 4 or 5 million enumerators—an impossible number.

A conference, attended by the provincial superintendents of 1881, and by the superintendents (nominated beforehand) for Madras and Bombay for 1891, was held at Agra, in December, 1889, in order to consider various difficulties, and arrange the details of the census. The provincial superintendents took up their appointments on the 1st April, 1890, and commenced their task at once. The first duty was, of course, to obtain complete registers of all the villages and houses. Let it be remarked, *en passant*, that even the words "village," "house," &c., had to be clearly defined; a term signifying "house" in one district, was in some instances applied to an "enclosure," or collection of houses, a few miles off. The houses had also all to be numbered according to the block in which they were situated. The instructions from headquarters also required to be translated into the language used in the district, and we find Mr. Baines stating, evidently with a certain degree of relief, that "apart from a small issue of "schedules in dialects specially confined to a few hill tracts, "seventeen languages were all that were found necessary."¹⁶ While all this was in progress, lists of supervisors and enumerators were being prepared, and the enumeration books, each containing from 10 to 60 schedules, were being printed. Each schedule contained space for eight entries.

Government had given general instructions that the *preliminary* record, *i.e.*, entering the full particulars on the schedules for the ordinary residents, should be made between the 15th January and the 15th February, 1891, but authorised an earlier date for the commencement of this operation in certain rural districts and wild hill tracts. The schedules were all delivered to the enumerators by the end of December, according to the estimate of what would be required for each district, circle, &c., but, as was only to be expected, various urgent demands for more came in while the census was in progress. The enumerators had a clear fortnight in which to make themselves thoroughly acquainted with the schedules and instructions before actually beginning their task. The house-to-house visitation accordingly commenced generally on the 15th January, except in the cases above mentioned; the enumerators filling in the schedules according to the answers given

¹⁶ Census of India, 1891, General Report, p. 283.

by the householders, after the latter had received due explanation as to the scope of the query. There then only remained the comparatively simple operation of bringing the schedule up to date between the hours of 6 and 10 p.m. on the night of the 26th February.

Sample questions to be asked by the enumerator were circulated beforehand by the Census Commissioner as follows:—

Standard Questions to be asked by the Census Officer who fills up the Schedules.

Note.—These questions indicate the main points on which inquiries are to be made, but the instructions and rules must be carefully studied before the person filling up the schedules begins his task, so that if the answers first given to these questions do not contain the information required according to the rules, additional questions must be asked until the answers furnish that information.

PART I.—*Questions on the First Round.*

1. Who is the head of this family residing here?
2. (Col. 1.)—What is your name and father's name?
3. (Col. 2.)—What is your religion?
4. (Col. 3.)—Do you belong to any special sect of that religion? If you do, to what sect?
5. (Col. 4.)—What is your caste (tribe, race, &c.)?
6. (Col. 5.)—What is the name of the branch of that caste (tribe or race) by which you are commonly known?
7. (Col. 7.)—How old are you—that is how many years have you completed?
8. (Col. 8.)—Have you ever been married? If you have, have you a wife (or husband) now alive?
9. (Col. 9.)—What language was spoken in your father's household?
10. (Col. 10.)—In what district were you born? If it is not in the province, in what province is it? If not in British territory, in what State? If not in India, in what country?
11. (Col. 11.)—How do you get your living? If from the land, are you the owner or tenant? If owner, do you cultivate any of your land, or let it all out? Have you any other occupation besides agriculture? If you have, what is it? If you have several occupations, which do you say is the principal one?
12. (Col. 12.)—Are you attending school or college, or being educated at home? If you are not, can you read and write?
13. (Col. 13.)—If you are no longer attending school or college, and can read and write, what language can you read and write best? Can you read and write English?
14. Now tell me the names of all who are ordinarily living or taking their meals with you? First the members of your family in order of age; next, your servants who live with you; lastly, visitors stopping in the house? Are any of the visitors likely to be here on the 26th February?¹⁷ (If you object to telling the names of any of the females in the house, I will enter them by numbers only.)
15. Now answer each question from 2 to 13 above, about each of the persons you have mentioned.

¹⁷ The Hindu, Mussalman, or Burmese date was given when more intelligible to those concerned.

16. Are any of these persons supported by you without doing any work for themselves?
17. Is any one of the persons mentioned by you insane, or deaf and dumb from birth, or totally blind, or a leper?

PART II.—*Questions on the Final Round.*

18. Listen while I read out the names of the persons entered as living in your house. Are all these persons alive? Has any one of them gone away, so that he is not living in or taking his meals from the house?
19. Is anyone living in or taking his meals from your house who has come here since the entries were made, and who is not included in them? Has any child been born in your house since then?
20. If any person has so come, or child born, answer all the questions 2 to 13 about each of such persons.¹⁸

It will be noticed that statistics of leprosy, in addition to the usual infirmities, were collected.

The above regulations applied to the settled districts of the country. The *ports*, *cantonments*, and *railways* were placed under the customs, military, and railway authorities respectively, but the district officer was enjoined to work in co-operation with those officials, as there would be boundary and other questions to settle between them. Most of the railway companies agreed to the Government's request that the census should be by districts, but a few divided their systems into departmental sections, which they found more convenient. The *boat* census required special arrangements; on the navigable rivers patrol boats were stationed at various intervals to intercept the passengers for three days after the date of the census, these intervals of course being so arranged as to prevent any from escaping. In the case of very large rivers, three boats were moored at each station, one being as nearly as possible in mid-stream. Special care was also taken not to omit the *travellers by road*, night journeys being extremely common in southern India even in February. All travellers were supposed to receive a ticket to prevent their being counted twice, though it is believed that on the railways a few errors did creep in of this sort.

In certain districts special precautions were necessary. They are far too numerous to mention in detail, but the following are among the most interesting of the devices employed. In the Sunderbans, the enumeration extended from the 10th January to the 31st March. The swampy nature of the scrub-forest in the southern portions of this region rendered it impossible for the enumerators to discover all who work there, for no one resides in those regions permanently: only wood-cutters frequent them for a comparatively short season, which is over by the end of

¹⁸ Census of India, 1891, Proceedings, Part I, containing the orders and general instructions up to the 30th June, 1890, p. 120.

March. Patrols were therefore stationed at all the outlets, and the laden boats were counted on their exit.

“ In Burma various expedients were employed in some of the outlying districts to narrow down as far as possible the non-synchronous area. The population of these remote hill villages is not given to gadding about. When they move, they move like snails, with all their household goods on their backs. The headman was asked to induce the villagers to remain at home on the night of the census, and to each household a bundle of bamboos was given. The big bamboos signified the adults, the smaller the children, and distinguishing sex-marks were sometimes put on each. When the census schedule book was written up by the census clerk, instructions were given to the village headman, who, though he could not read, could count, to tell each householder to prepare a bundle of bamboos, one for each member of his family. These bundles corresponded in number with the entries against each house. On the night of the census, the village headman went round, checked and collected each bundle of tallies, and took them to his house. If a death occurred, the bamboo representing the individual was broken. If one was absent, his bamboo was taken away. If there was any visitor, he was promptly entered by adding a bamboo to the tallies of the house. The enumerator, when he came round soon after the census night, checked the tallies with his book, and made the necessary alterations.”¹⁹

In Assam, the tea gardens required special arrangements, and the duty was generally entrusted to the managers.

In Madras, Bombay, and Berar, special arrangements were also made in the case of fairs which were being held at certain places, differing in detail for each.

In Bombay, the provincial government proclaimed a public holiday on the 25th, 26th, and 27th February. This enabled the Census administration to have the services of a large government clerical staff for those three days. [In several other provinces, wherever the state of public work allowed of its being done, the government employes were also turned on to census work for the three days.]

In the Punjab, certain mid-Himalayan tracts, *e.g.*, parts of the Chamba State, were inaccessible at the time of the census, as the passes leading thither, between 16,000 and 19,000 feet high, were still blocked, and the enumerators had to wait until the snow melted. The returns from Spiti, in the Kangra district, were the last to be completed, the pass not being open till the 21st June. In some other parts of India also, such as the native States of

¹⁹ Census of India, 1891, vol. ix (Burma), p. 275.

Rajputana, Central India, and Kashmer, the enumeration was spread over twenty-four or even forty-eight hours. For the regions "beyond the border," to the north and west, the preliminaries were finished on 24th February, the heads of clans were collected on the 27th, and inquiry made of them whether there were any births or deaths to be recorded, and whether any visitors had arrived or left since the preliminary investigation had been made. The "house" was a term of peculiar difficulty in these regions, as it often consisted merely of a mat and a fire. The Punjab census, I may mention, is the only one which is provided with the luxury of an index.

Before passing on to what returns were actually collected, I will just point out that in a few outlying and wild hill tracts, of which the more important are Sikkim, British Baluchistan, the cis-Salwîn Shan States, some of the Burma frontier tracts, and the Rajputana Hill tracts, no census was attempted. In some of these, however, the population was registered. In Manipur, the enumeration was made, but the records were destroyed in the troubles which occurred immediately after the census. The estimated population of all the excluded tracts amounts to but little over 1,100,000. Nipal and Bhôtan were not included in the census operations.

Tabulation.—The following is a list of the "abstraction sheets" and "tabulation registers" prescribed by the Census Commissioner:—

- Abstraction Sheets. I. A combination of sex, age, religion, and civil condition, abstracted from Cols. 2, 6, 7, and 8 of the Census Schedule.
- II. A combination of sex, age, religion, and education; Cols. 2, 6, 7, and 12.
- III. " age, and occupation; Cols. 6, 7, and 11.
- IV. " sex, caste, and sub-caste; Cols. 4, 5, and 6.
- V. " sex and parent tongue; Cols. 6 and 9.
- VI. " sex and place of birth: Cols. 6 and 10.
- VII. " sex, age, and caste, with infirmities; Cols. 4, 6, 7, and 14.
- VIII. A combination, for Christians only, of religion, sect, race, and nationality, with sex; Cols. 2, 3, 4, and 6.
- IX. A combination, for Christians only, of race, age, and sex; Cols. 4, 6, and 7.
- X. A combination of sex, religion, caste, education, and language of the literate; Cols. 2, 4, 6, 12, and 13.
- XI. A combination of religion, caste, age, sex, and civil condition; Cols. 2, 4, 6, 7, and 8.
- XII. A combination of age and sex by annual periods from Cols. 6 and 7, for from 50,000 to 100,000 persons in the province.

The tabulation registers were twenty-six in number, sixteen being filled up for every block, and ten only for those in which special information for particular classes or religions were recorded.

The General Registers were:—

- I. The number of houses and total population, male and female, of each block.
- II. Variation of village population since 1881.
- III. Towns and villages classified according to total population.
- IV. Totals of religions for every block, males and females.
- V. The population of every block, male and female, grouped by age and religion in five annual and ten quinquennial periods.
- VIA. The same statistics for every block for the married of both sexes,
- VIB. " " unmarried of both sexes.
- VIC. " " widowed "
- VII. The learning, literate and illiterate, for both sexes and all religions in three age periods, 0—14 years, 15—24, and 25 years and over, in every block.
- VIII. Parent tongue by sex in every block.
- IX. District of birth by sex in every block.
- XIV. Caste and sub-caste of the inhabitants of every block, males and females.
- XVA. Occupations of males in the three age periods 0—9 years, 10—14, and 15 years and over, for every block.
- XVB. Occupations of females in like manner.
- XIX (optional). The learning, literate and illiterate of both sexes of every caste, in every block, and
- XX (optional). Every caste in every block divided into married, unmarried, and widowed, for both sexes, and in four age periods, 0—9 years, 10—14, 15—39, 40 years and over.

The Special Registers were:—

- X. The insane grouped by sex in eleven quinquennial age periods in every block in which they were found.
- XI. The same statistics for the blind.
- XII. " the deaf mute.
- XIII. " lepers.
- XA. The castes of the insane in every block in which they were found.
- XIA. " blind.
- XIIA. " deaf mute.
- XIIIA. " lepers.
- XVI. The sects of Christians, divided into non-Indians, Eurasians and natives, and
- XVII. The races of Christians, other than native, divided into four age periods, 0—14 years, 15—34, 35—49, and 50 years and over.

The classification of the occupations in India differs from the English. It is as follows (there being seven classes, 24 orders and 77 sub-orders):—

Class A. I.—Administration. II.—Defence. III.—Service of Foreign States. Class B. IV.—Provision and care of cattle, &c. V.—Agriculture. Class C. VI.—Household and Sanitary Services. Class D. VII.—Food, Drink, and Stimulants. VIII.—Lighting, Firing, and Forage. IX.—Buildings. X.—Vehicles and Vessels. XI.—Articles of Supplementary requirement. XII.—Textile Fabrics and Dress. XIII.—Metals and Precious Stones. XIV.—Glass, Earthen, and Stoneware. XV.—Wood, Cane, and Matting. XVI.—Drugs, Gums, &c. XVII.—Leather, Horn, and Bones, &c. Class E. XVIII.—Commerce. XIX.—

Transport and Storage. Class F. XX.—Learned and Artistic Professions. XXI.—Sport. Class G. XXII.—Earthwork and General Labour. XXIII.—Indefinite and disreputable occupations. XXIV.—Means of Livelihood independent of occupations.

An inquiry into the occupations connected with agriculture was also made, in order to split up the large class of agriculturists, which form nearly 60 per cent. of the population. Many of these had other means of livelihood apart from that derived from the soil. In the tabulated returns, no distinction has been made between breadwinners and dependents, or between the sexes, although "special instructions were issued to distinguish in the "schedules the dependents from the rest, but this was merely a "measure of administrative convenience, in order to meet objections to entering against members of one sex the name of an "occupation practicable or permissible exclusively for the other,"²⁰ and the distinction was ignored in the printed tables.

The report and tables for each province or agency were published by the Superintendent at his own head-quarters, while the Commissioner has dealt with India as a whole. All the returns have been arranged upon a uniform plan, and similar statistics are given throughout. But the nature of the case obliged superintendents to make exceptions in several instances, as for example, in the case of statistics of marriage by caste, which was a subject left optional with local governments, and therefore not returned in all the provinces. The results being for twelve provinces and six States, are contained in a number of volumes which is far greater than for any other part of the British empire; in fact, the enormous amount of matter contained in the United States Census renders this latter the only one in the world which surpasses the Indian in magnitude. But, as is well known, the United States Census is not synchronously taken, and includes a number of inquiries as to the economic condition of the nation, concerning which no statistics are published in other countries or which, elsewhere, form the subject of annual or special returns.

It is no part of my purpose to-night to discuss the results of the enumeration, but a few remarks may perhaps be permitted to try and show the peculiar importance of the present census. The conditions of life among the natives of India render of paramount importance some of the inquiries which in other lands are of comparatively minor interest. Such are the questions of caste, religion, racial characteristics, early marriages, high birth and death-rates, widowhood, &c.; all of which depend on one another to a degree hardly conceivable here, where we are accustomed to freedom of

²⁰ Census of India, 1891, General Tables, vol. i, p. 445.

thought and the emancipation of our actions from the trammels of forms and ceremonies. A large portion of the tables is consequently devoted to the combinations of all these particulars. It is hard to say which of these is the more important. The caste question is perhaps the most interesting, owing to its traditional connection with the occupations of the people, and also the customs regarding marriage of infants and widows. In the latter consideration, again, race and religion play a part scarcely, if at all, inferior to that of caste; locality, perhaps, one even greater.

The census of 1891 is only the second in which the enumeration of the whole people has been simultaneously attempted, as in 1871-72 the larger provinces selected their own time and schedule. The present occasion is consequently the first on which we can ascertain what variations have occurred over that empire during the decade. It follows also that, while in England our census only informs us of the fluctuations in the rate of variations, in India we are for the first time made acquainted with the movement of the whole population, the growth of education, the declining influence of caste, the changes in religion, &c. The general progress of a people amounting to nearly a fifth of the population of the globe is chronicled for the first time.

Another important result of this census is, that although registration of vital statistics has been introduced into India, yet it is only in the larger towns that it can be considered trustworthy, and the enumeration of 1891 has served as a basis for working out the birth and death-rates of India, and the usual actuarial calculations connected therewith: a task which was tentatively accomplished from the corresponding data of 1881. It was known that both birth and death-rates were higher than here, but while some maintained that they were nearly double the English rates, there were others who contended that the excess was scarcely half as much.

Cost.—The cost of the enumeration has been remarkably low, amounting only to just under 26 lakhs of rupees, or about 173,000*l.* (taking the rupee at 1*s.* 4*d.*). But it must be remembered that clerical labour is extraordinarily cheap in that country; a large subordinate agency in the offices of the State was placed at the disposal of the census administration for a day or two, and much gratuitous help was given by non-official enumerators and supervisors.

Showing the Imperial Charges on Account of the Census.

Province, &c.	Actual Charges during the Year.					Grand Total.
	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Madras	244	72,405	3,51,527	35,917	—	4,60,093
Bombay.....	—	66,509	1,11,408	8,476	—	1,86,399
Bengal	—	1,08,952	5,52,110	43,083	—	7,04,145
N.-W. Provinces } and Oudh..... }	—	92,967	3,64,041	20,264	—	4,77,272
Panjáb	—	69,015	1,22,270	2,381	—	1,93,666
Burma	—	34,154	87,085	26,091	—	1,47,330
Central Provinces	—	24,914	75,715	9,628	—	1,10,257
Assam	—	23,143	47,367	3,117	—	73,627
<i>A. Total Provinces</i>	244	4,92,059	17,11,523	1,48,957	—	23,52,783
Ajmér	—	2,582	6,648	1,000	—	10,230
Coorg and Bangalore	—	229	2,809	833	—	3,871
Quettah and Andamans } }	—	645	165	—	—	810
Rajputána	—	9,649	6,476	1,813	—	17,938
Central India	—	15,836	22,914	2,779	—	41,529
<i>B. Total Minor Tracts</i>	—	28,941	39,012	6,425	—	74,378
<i>C. Census Commissioner, his office and printing....</i>	17,576	42,753	47,785	41,886	20,000	1,70,000
GRAND TOTAL	17,820	5,63,753	17,98,320	1,97,268	20,000	25,97,161

Comparison of the Imperial Charges of 1891 with those of 1881.

Province, &c.	Population Enumerated (in Thousands).		Charges in 1881.	Percentage of Increase in		Mean Charge per 1,000 Persons.	
	1891.	1881.		Population.	Charges.	1891.	1881.
			Rs.		Rs.	Rs.	Rs.
Madras	35,630	30,827	5,00,000	15·6	— 8·0	12·91	16·22
Bombay	18,901	16,506	1,69,903*	14·5	9·7*	9·86	10·29
Bengal	71,347	66,691	8,55,647	6·9	— 17·7	9·87	12·83
N.W. Provinces, &c.	46,905	44,108	2,80,145	6·3	70·3	10·18	6·35
Panjáb	20,867	18,843	1,56,000	10·7	24·1	9·28	8·28
Burma	7,605	3,737	76,645†	103·5	92·2†	19·37	20·51
Central Provinces	10,784	9,839	1,67,983	9·6	— 52·3	10·22	17·07
Assam	5,477	4,881	39,082	12·2	88·3	13·44	8·01
<i>Total Provinces</i>	217,516	195,432	22,45,405	11·3	4·8	10·81	11·49
Other heads of account..... }	....	....	1,78,118	....	....	....	....
Total	281,615	253,793	24,23,523	11·0	7·2	....	....

* Provincial contribution is excluded.

† The printing in Burma in 1881 is reported to have been only partially debited to the census grant.

As regards the *personnel* of the administration, the provincial superintendent was usually "an officer selected from the district or "revenue staff, of some years' experience of the language and "customs of the people, as well as of the system of administration, "from the village upwards."²¹ The general district arrangements, as mentioned above, were under the collector of the district; the charge superintendent was usually the subdivisional revenue or police officer. The supervisors were generally subordinate revenue officers, village accountants, and where non-officials were appointed, as in towns, the position was generally looked upon as an honour. Many enumerators were volunteers, and received special certificates where the work was well done. Minor officials were also largely employed for this purpose, and the number of paid enumerators (where the Government *had* to pay the men) was relatively small.

(b.) *Ceylon.*

The conditions in Ceylon bear so much resemblance to those of Southern India, that some of the arrangements were perforce the same in the two dependencies. It was necessary also to take the census on the same day as in India, not only for the reasons mentioned above, when dealing with that empire, but also because there is now such a constant stream of migration between the island and the mainland that many errors from this cause would have crept in had any other day been chosen.

The official administration was utilised as far as possible. The Government Agent had control of the arrangements in each province, and under him were the chiefs of divisions and the village headmen. These latter were appointed enumerators. An estimate as to the number of schedules which would be required was obtained from the headmen, who were required to supply the following particulars on a "Preliminary Form" and a "House List."

"The Preliminary Form gave the number of houses built, or in course of building, occupied and unoccupied; the number of churches, &c.; the number of schools; the names of the navigable waterways, of halting places for boats, of cart roads, of halting places for carts and cattle; the number and situation of rest-houses, amblams, and 'ruppas;' the number and situation of cooly lines and hospitals; the names of estates; and the number and names of mines.

"The House List gave the number of the house, the name of the head of the family, the situation of the house, and the language, if any, which the head of the family could read and write."²²

²¹ J. A. Baines.—Administration of the Imperial Census of India, 1891.

"Journal of the Society of Arts," 10th June, 1892.

²² Census of Ceylon, 1891. General Report, p. 1.

The schedules were left at each dwelling, to be filled in by the householder wherever possible, as in England, and collected by the enumerators the next day. The householder's schedule was printed with headings in English, Singhalese and Tamil on one sheet.

No inquiry was made as to caste; the reasons being that it is not so important a factor in social life as it is in India, "and the inquiry would have led the people to think that an importance was now attached to an institution which it has been the declared policy of the Government of Ceylon to disregard." Nor were particulars required as to conjugal condition, as, the Superintendent of Census remarks, "so long as it is uncertain what constitutes a marriage in Ceylon, it is useless to inquire whether persons are married or not."²³ Otherwise the questions were similar to those asked in India.

The cost of the census was as follows :—

	Rs.	Per 1,000 of Population.	
		Rs.	
Enumerators	68,686	23	
Establishment	41,659	14	
Miscellaneous.....	18,908	6	
Total	129,253	43	

The office at its greatest strength numbered 57, the average number employed from the 1st January, 1891, till the 1st May, 1892, being 49.

PART III.—*The Colonies.*

In order to avoid repetition in what follows, I shall assume that, unless the contrary is stated, each colony divided the country for census purposes into districts, placed under a superior officer, often named (as I shall call him throughout the remainder of this paper) the *Supervisor*, who was under the immediate control of the Superintendent of the Census; and that these districts were again parcelled out into convenient areas for the enumerators. In some colonies there were four grades of officials, the supervisors themselves being under superior officers. The term *enumerator* I use in the

²³ Census of Ceylon, 1891. General Report, p. 3.

same sense as in England, but his title varied in different colonies: in Queensland, for instance, he was called a *collector*, his superior officer being the enumerator; in Victoria and Western Australia he was known as the sub-enumerator. These smallest districts were almost universally arranged so as to coincide with some existing sub-division of the country. The schedules (except in Canada, and amongst savages) were left with the householder, though in a great number of cases, the enumerator had to fill them in himself, when collecting them after the night of the Census. (It may be noticed, by the way, that there is no uniformity in the Reports as to the date of the Census: some Superintendents consider that it was taken on the 5th, others on the 6th of April.) Rarely was the enumerator able to collect all the schedules on the morrow; nor indeed was it expected, and the time granted him for this purpose varied in different colonies. Having collected his schedules, his first duty was to prepare an abstract of them (this was sometimes done by his superior) and forward it, as early as possible, to his supervisor, who sent it on with others from his district. Sometimes the enumerator sent the abstract and schedules direct to headquarters.

Magistrates, registrars, and civil officers were very generally *ex-officio* supervisors for their districts. They chose their own enumerators, a list being usually sent to the head office, and were often left to sub-divide their districts themselves, more especially in the smaller colonies. Masters and Governors of gaols, work-houses, hospitals, &c., were appointed enumerators of their institutions. The method of payment varied considerably; in some colonies it was by results: in Barbados for instance, the enumerator was paid 1*d.* per head for every person recorded. In other colonies a fixed sum was allotted to each official. The method of payment by results was often objected to by superintendents as tending to exaggerate the results. As much publicity as possible was usually given beforehand to the fact that the Government were about to take a census of the people, sometimes by advertisements or by announcements in the press, sometimes by securing the co-operation of all persons—such as ministers, teachers, minor officials, &c.—holding any prominent local position throughout the colony.

I have ventured to draw up, somewhat tentatively, a table (Appendix) to show what particulars are collected in the principal parts of the Empire, the idea being to enable anyone to see at a glance the differences, and to help in making *general* comparisons. But in such a table, there are necessarily many pitfalls, and I have accordingly prefaced it by a few explanations. The main principle of the table is that in each colony some kind of return is made concerning each subject against which a cross

(×) is placed. An absolutely blank space denotes that I have as yet no information: this is due in nearly all cases to the fact that the census returns are not yet complete. It by no means follows that the returns themselves are identical, or even similar, in two colonies against which there is a cross in any particular column; the occupations returns of England and Victoria, for instance, are totally unlike each other, and no comparison can be made between them. All that can be stated from the table is that a return as to occupation is made both in England and Australia. It will be seen that all the principal colonies enumerate the number of males and females, and a return is also made of occupations. Nearly all give the number of houses, the age, the conjugal condition, the birth-place, and the religion. The exceptions will be noted in dealing with the different colonies.

(a.)—*Australasia.*

Historical.²⁴—Census returns, in one form or another, have existed from a very early period in Australia. In 1788, when the first ship-load of convicts was landed at Sydney Cove, the earliest official "muster" was held. These musters were repeated, at first frequently, perhaps weekly, and afterwards annually until 1828, in which year the first "Census," strictly speaking, of New South Wales was taken. The Act in that year made provision for ascertaining the number (the sex, the adults and the children), names and condition of the inhabitants of the colony with some particulars as to religion, "and also the number of cattle, and the quantity of "located, cleared, and cultivated land." By condition is meant the status of each person: whether free (and if so, whether a voluntary emigrant, or liberated, &c.), convict, ticket of leave, &c. Similar censuses were taken in 1833 and 1836. In 1841 several important changes were made: New Zealand was for the first time considered as a separate colony, age groups were tabulated, and the occupations and houses were classified. In 1846, further improvements were introduced, the statement as to the original civil condition was no longer made compulsory (the inquiry was abandoned altogether in 1856), while columns were added in the schedule for education and birth-place. The Censuses of 1851, 1856, and 1861 were on similar lines. In this latter year, the other colonies were left to make their own enumeration, and the Census of New South Wales was confined to the limits of that colony, as now existing (Victoria had however been separated from New South Wales in 1851, and the Census of 1856 did not include the former colony). The inquiry as to infirmities was introduced in that year. Since

²⁴ See *The Statistician's Report on the Eleventh Census of New South Wales*, 1893.

1861, also, the Census has been decennial, and the scope has remained practically the same. The history of Censuses in the other Australasian colonies has been very similar; all that need be said here is that the Census has been quinquennial in New Zealand since 1881, and in Queensland since 1875. In New Zealand a law of 1851 ordered a census in the first, fourth, and seventh years of every decade, but it was repealed in 1858. The first Census, other than musters, in Tasmania was taken in 1841.

There is very great uniformity in the Censuses of 1891 of Australia and New Zealand, due principally to a preliminary Congress of the Statisticians of those colonies held at Hobart in 1890, and invited by the Premier of Tasmania. Only Queensland and Western Australia (the latter owing to the illness of the Registrar-General) were unrepresented at this Congress, but in both the schedule recommended by the meeting was, with very slight modifications, adopted. This Congress decided that the inquiries should include the name, sex, birth-place, age, religion (statement not compulsory), occupation (stating whether employer, employed on his or her own account, or wage-earner), conjugal condition, education, sickness, and infirmity, materials of houses, number of rooms. Any colony was free to extend the inquiry beyond these limits if deemed advisable.²⁵

The organisation was very much the same as in the mother-country: a Census Office was established in the colonial capital, while for the purposes of the enumeration, district supervisors and enumerators were appointed. Schedules were distributed at the different houses, but generally no attempt was made to collect them in a single day. Such an attempt would have been impossible, considering the sparseness of the population compared with that of the British Isles; nor was it necessary. The collection of the data was a good deal hampered by the weather, and the 5th April was not a very suitable time for this operation at the Antipodes. But, as remarked by some of the Superintendents, what suited one part of the continent might prove bad for another. In Queensland, as it happened, floods caused many difficulties, whereas in Western Australia, the greatest inconvenience, and even danger, was caused by a severe drought.

Occupations.—The classification of the occupations is one of the most important differences between the English and Australian tables. The people are primarily divided into two main groups: *dependents* and *breadwinners*, the latter being classed as (1) *primary producers*, (2) *modifiers of materials*, (3) *distributors of materials*, (4) *personal services (domestic)*, (5) *professional services*, and (6) *indefinite service*. This classification of the breadwinners

²⁵ "Census of Tasmania, 1891," p. xii.

bears in the outline some resemblance to the system devised by Dr. Farr, and the first five groups correspond nominally, but in reality very roughly, to the English *agricultural, industrial, commercial, domestic, and professional* classes. But the occupations included in the groups are often very different: the very important occupation of mining, which in England is *industrial*, is in Australia ranked with those of the *primary producers*. This is only one, but perhaps the most striking illustration of the differences between the two systems. Breadwinners and dependents are kept carefully separated.

Breadwinners are also separated into "employers, employed, "and working on own account." Besides these details, in most of the Australian colonies statistics were collected of the number of persons out of work during the week preceding the Census, and in some the "relations assisting head of house" were also tabulated. Manufacturers and dealers are separated; those who are both being classed with the makers.

I quote the classification adopted by the Australasian Census Conference:—

Table defining the Principles of the Method adopted in the Classification of Occupations, in accordance with the uniform Scheme agreed upon by the Conference of Statists held in Hobart in March, 1890; and showing the number of Persons, Males and Females, employed or belonging to the principal Groups of Business, Calling, or Service, or belonging to the principal Divisions of Dependents, arranged systematically under Classes, Sub-orders, and Sub-groups.

CLASSIFICATION OF OCCUPATIONS, 1891.—DEFINITION OF PRINCIPAL CLASSES.

SECTION A.—BREADWINNERS.

I. PROFESSIONAL.—Embracing all persons, not otherwise classed, mainly engaged in the government and defence of the country, and in satisfying the intellectual, moral, and social wants of its inhabitants.

II. DOMESTIC.—Embracing all persons engaged in the supply of board and lodging and in rendering personal services for which remuneration is usually paid.

III. COMMERCIAL.—Embracing all persons dealing directly with hire, sale, transfer, distribution, storage, and security of property and materials, and with the transport of persons or goods, or engaged in effecting communication.

IV. INDUSTRIAL.—Embracing all persons not otherwise classed, who are principally engaged in various works of utility or in specialities connected with the manufacture, construction, modification, or alteration of materials so far as to render them more available for the various uses of man, but excluding, as far as possible, all who are mainly or solely in the service of commercial interchange.

V. AGRICULTURAL, PASTORAL, MINERAL, AND OTHER PRIMARY PRODUCERS.—Embracing all persons mainly engaged in the cultivation or original acquisition of food products, or in obtaining other raw materials direct from natural sources.

VI. INDEFINITE.—Embracing all persons who derive incomes from services rendered, but the direction of which services cannot be exactly determined.

SECTION B.—DEPENDENTS:—NON-BREADWINNERS.

VII. DEPENDENTS.—Embracing all persons dependent upon relatives or natural guardians, including wives, children, and relatives not otherwise engaged

in pursuits for which remuneration is paid; and all persons depending upon private charity, or whose support is a burthen on the public revenue.²⁶

Tabulation. The Card System.—The work inside the Census Office also differs very materially from that in the United Kingdom, owing to the adoption of what is known as the *card-system* of tabulation. All the Australian superintendents who give any details concerning their office work speak in terms of high praise of this system. The card used was not identical in all the colonies, but the principle was the same. I reproduce here a specimen of the New Zealand tabulation card (drawn exactly to scale). Each card was devoted to a single individual, the whole

New Zealand Tabulating Card.

County or Borough												
Place No.										Sch. No.		
Card										Farm, Station, Hotel, Hospital; Lunatic, Benev., Orph. Asyl.; Ind. Sch., Gaol.		
AGE.	Under 1	1	2	3	4	5	6	7	8	9	N.S. Cd.	
		10	20	30	40	50	60	70	80	90	N.S. Ad.	
Relation to Head } of House }												
Condition		Married		Unmar.		Wid.		Div.		N.S.		
Occupation E.O. W. W.N. A.												
SICK.	Sick	Acc.	Lun.	Other								
	N. Z.	Q.	N.S. W.	Vic.	S A.	W. A.	Tas.	Eng.	W.	Scot.	Ire.	China.
BIRTH.	Other										B.S.	F.S.
	Ch. E.	P. U.	Pres.	Wes. M.	M. U.	P. M.	Bap.	C. Ind.	Luth.	Sal. A.	Rom. Cath.	
RELIGION.	C.U.	Free Thought		Object		Other						
	EDUCA- TION	R. W.	R. O.	Can- not	N. S.	SCHOOL- ING	Gov. Sch.	Priv. Sch.	Home Teac.	Sun. Sch.	Sch. Tr.	

number of cards used therefore corresponding to the whole population. On it were entered all the particulars concerning each individual. It will be seen that the card is divided into a number of compartments for age, occupation, place of birth, &c.; initial

²⁶ Tasmania : Census of 1891. "Report," p. liii.

letters being printed as much as possible. The clerk had thus simply to draw a bar across the compartments corresponding to the particulars of each individual as entered on the schedule. In the case of a man aged 45, born in Queensland, and a Presbyterian, for instance, the compartments 40, Q., Pres. would be crossed out. There were thus very few entries which required to be written in—and for those abbreviations were employed as much as possible. When the cards were all filled in, it was very easy to count the number of persons answering to any group, by selecting all the cards in which the compartment for that group was marked. Any required combination could also be easily obtained, *e.g.*, the Catholics aged 5—15 would be ascertained by throwing all the Catholics into a heap, and from this heap selecting all those aged 5—15.

Generally the cards for males were printed in black, those for females in pink. In some cases (Tasmania amongst others) a further distinction was made: cards for breadwinners being traversed diagonally by thick blue bars, while those for dependents were plain.

The New Zealand card is one of the most elaborate, and the Tasmanian (as may be seen from the following specimen), one of the simplest. Abbreviations in filling this up were of course freely used.

Tasmanian Tabulating Card.

<i>DIV</i>	<i>SCH</i>	<i>AGE</i>
<i>Con</i>	<i>Edn</i>	<i>Inst</i>
<i>Born</i>		(.....)
<i>Relig</i>		
<i>Sick</i>		
<i>Occn</i>		(.....)

New South Wales.—Besides announcements in the public press, placards were distributed throughout the Colony, and in the towns some of these advertisements were drawn up in the Chinese language. In collecting the Chinese schedules, an interpreter accompanied the enumerator. The cost was somewhat lightened through the Census Act providing for the free transmission of letters, packets, and telegrams relating to the Census, such being marked “Statistics.” The supervisors were as a rule men busily engaged about their own affairs, and were in most instances paid

an amount insufficient to recompense them for the labour of examining the householders' schedules individually, so that this part of their duties was, according to the Report, inadequately performed. The schedules of one small street in Sydney did not reach the Statistician (who was Superintendent of the Census) at all, and the Census was re-taken several months afterwards. One whole township, also, was altogether overlooked, and the enumeration was carried out there a week late. [It may be as well to mention that in the Colonies the "township" is merely an unit of area, as is a parish; it may or may not be a town.]

The returns from this Colony are not yet complete, and I am consequently unable to give any details as to the cost of the Census.

Queensland.—In this Colony the wet weather proved a serious impediment, and a strike in the western districts also caused inconvenience, as the strikers, in Government employ, were unwilling to further any object the State had in view. It is considered that, from both these causes, and also on account of the nomadic character of many of the people in the remoter districts, several persons escaped enumeration. For these reasons, the Registrar-General has made an addition of $1\frac{1}{2}$ per cent. to the numbers actually recorded. This is the more confusing, as the Report throughout uses the words "the number of persons enumerated," whereas they appear to have been increased by $1\frac{1}{2}$ per cent. We are not told, either, whether the increase applies only to certain parts of the country. In this Colony, members of the police force were, wherever they could be spared, employed as enumerators.

The whole cost of the Census in Queensland was just about 20,000*l.* (a little over 12*d.* per head), of which rather more than 11,000*l.* represents the cost of the actual collection of the data.

Western Australia.—Here the police were, almost throughout the Colony, appointed enumerators, and the Government Residents and Resident Magistrates acted as supervisors. A great deal of trouble was saved by issuing to householders, a few weeks beforehand, schedules marked "Specimen," which were generally filled in tentatively, and any difficulties explained before the real schedule was delivered. The aborigines were altogether excluded. The returns as to occupations were still further detailed by an attempt to obtain the number of employers of labour, and the average amount of wages paid weekly by such employers. The Census was freely advertised beforehand. One train (a special) only was running during the night from Albany to Beverley, with the passengers landed on Sunday from the East; the guard was sworn as a special enumerator.

New Zealand.—The Census operations did not differ materially from those of the other Australasian colonies, except in the case of the Maoris, and this branch of the inquiry was in charge of the officers of the Native Department. It was not found practicable to visit each Maori dwelling, and the necessity was not so great, because selected natives may be found who can readily give full particulars as to every member of their tribe.²⁷ The cost was as follows:—

	£
Enumeration: European Census	9,734
Maori „	789
	<hr/>
	10,523
Compilation, &c., at Office	5,608
	<hr/>
Total	16,131
	<hr/>

(b.) *South Africa.*

Cape Colony. Historical.²⁸—Returns of the number of the population, live stock, and agricultural produce, were annually made to the Directors of the Netherlands East India Company, from the commencement of the colonisation of the settlement in 1652; but the earliest known is that of 1687. They were continued, with few exceptions, until 1785. These annual returns were also made under the English administration from 1823 to 1856, when they were discontinued, owing to the untrustworthiness of the results. In 1865, the first Census proper was taken, the inquiries including houses, sex, relationship, age, race, country of birth, occupation, education, attendance at school, infirmities, as well as the investigation into land, live stock, and agricultural produce. The second Census was taken ten years later, in 1875, and that of 1891 is the third, an interval of sixteen years having been allowed to elapse: in the former year religions and conjugal condition were the principal additions to the schedule, while in 1891, statistics (financial and other) of friendly societies and religious denominations were collected.

Enumeration.—The Census Act was passed in August, 1890, but preparations had been begun in the preceding year in the Statistical Branch of the Colonial Secretary's Department. The operations and the information sought are not dissimilar from those in Australasia, on which the arrangements at the Cape were to a certain extent modelled. "The country was at the outset divided for census purposes into 93 census districts,

²⁷ "Report on the Results of a Census of the Colony of New Zealand." By E. J. von Dadszen, 1893, p. 118.

²⁸ Census of the Cape of Good Hope, 1891. Final Report, pp. ii—iv.

“corresponding to the fiscal divisions of the Colony Proper, and “to the Magisterial Districts in the Transkeian Territories. In “the former the Civil Commissioners, in the latter the Native “Magistrates, were appointed *ex-officio* Supervisors, the three “Chief Magistrates exercising a general supervision over their “respective territories.”²⁹ The census districts were divided into sub-districts by the supervisor, so that the enumerator could make complete rounds in from three to five days.

The enumerators were, before distributing the schedules to the householders, required to fill in test forms, so that the supervisors might be certain of their capability to collect the necessary data. As regards travellers, the railway officials enumerated their passengers, and special arrangements were made with the proprietors and agents of post-carts and other vehicles. Prior to the census-taking also, in order to counteract any possible misapprehension, special appeals were made to the Clergy of all denominations, to the Press, all local governing bodies, &c., &c., throughout the country, enlisting their co-operation. As with all savages, great care had to be taken with the natives to disclaim any connection between the census and taxation, &c. An endeavour was made to get at the ages of the natives, who had themselves no idea how old they were. But the enumerators received instructions to ask, concerning each individual, whether any particular event of local interest had taken place about the time of his or her birth, and from the answer received the age, within two or three years, could generally be deduced. The enumerators who dealt with the natives were consequently chosen from among men possessing considerable local knowledge.

Besides the usual data concerning individuals, agricultural and ecclesiastical statistics were also collected. In tabulating, the card-system, as described above, was employed.

Natal.—The present is the first occasion on which a Census has been taken in this country, and no attempt was made to enumerate the natives. The arrangements were similar to those at the Cape, but the more elaborate investigations were omitted.

(c.) *British North America.*

Canada. Historical.³⁰—Fifteen censuses were taken in “New France” between the years 1665-66 (February and March) and 1754, besides others in Newfoundland, Acadia, &c., at different dates, and numerous “statements of population.” Censuses of “Canada” were taken in 1765 and 1784, while in “Upper Canada” (or what is practically now the province of Ontario)

²⁹ Census of the Cape of Good Hope, 1891, p. iv.

³⁰ „ Canada, 1870-71, vol. iv, Introduction.

the census was annual from 1824 till 1842; during which period also several enumerations were made in other parts of the colony. Censuses in the different districts continued to be frequent until 1861, after which date no official enumeration took place until 1869-71. The Census of 1871, the first after the passing of the British North American Act in 1867, included Ontario, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island; other portions of the colony having counted their inhabitants just previously. Since then the census in Canada has been decennial (Newfoundland is not included), but an intermediate census was taken in the North West Territories in 1885, and in Manitoba in 1886.

The first Census, 1665-66, enumerated the population *de jure*, by families, ages, sex, conjugal condition, and professions and trades (not occupations of the whole people). The scope of the inquiry varied in each successive census: the "professions and trades" were soon dropped, but agricultural statistics and buildings were, on the other hand, included. The information required became more meagre during the 18th century. The annual returns from 1824 to 1842 also differed materially in their scope, inquiries made in one year being constantly omitted in the next. The ages at first consist of two groups only, viz.: persons under and over 16, but the number of groups was afterwards gradually increased. Birth-places appear for the first time in 1817 (in a census of Nova Scotia), occupations re-appear in 1827, in which year also we have the earliest reliable statistics of religion, births, marriages and deaths, education, and industries; while the infirmities are first recorded in 1842. The inquiry into the agricultural condition of the country was never omitted.

Scope of the Inquiry.—The Department of Agriculture, which had charge of the Canadian Census operations, has shown itself far more ambitious than the Governments of other colonies, and the Census there has been modelled rather upon that of the United States than on ours. No ordinary staff was available, and a special agency was accordingly organised, consisting of (1) a body of 14 Census Chief Officers (4 for Ontario, and 4 for Quebec, each of these provinces being mapped out into four divisions, and 1 for every other province), (2), 241 County Commissioners, and (3), 4,366 district enumerators. The Statistician to the Department of Agriculture was appointed Census Superintendent.

An elaborate investigation was made into the components of the general wealth of the country, as in the States, but with this I do not propose to deal, beyond quoting the following extract from the Census Report, as illustrating the mass of information sought:—

“The Enumeration schedules were eight in number.

“Schedule No. 1.—Nominal return of the living, containing 25 columns for the insertion of information relating to the following subjects: Residences; names; sexes; ages; civil condition; relation to head of family; birth-places; French Canadian or not; place of birth of father and of mother; religion; occupation, whether employer or wage earner, and, if wage earner, whether employed during the week preceding the Census; if employer, number of hands employed; educational status and infirmities; whether deaf and dumb, blind or unsound of mind. This schedule contained 5 columns more than the corresponding schedule of 1881. One of these columns, that relating to the description of the houses the people of Canada live in, is new. It called for the number of wooden, brick, stone, and composite houses, and the number of stories and rooms in each, in Canada.

“Schedule No. 2.—*Nominal return of deaths*, within the twelve months ended April 5th, 1891. The particulars asked for in this schedule were names of deceased, sex, age, month of birth if born in Census year, religion, country of birth, occupation, civil condition, month of death and cause of death. These inquiries occupied 10 columns. The 11th, 12th, and 13th columns were for public institutions.

“Schedule No. 3.—Real estate, orchard, nurseries, vineyards, and market gardens, containing 25 columns applying to the ownership and occupation of real property, the products of the orchard, &c.

“Schedule No. 4.—Return of farm products, containing 32 columns, and all relating to agriculture.

“Schedule No. 5.—Return of live stock, animal products, home made fabrics and farm labour, containing 29 columns.

“Schedule No. 6.—Industrial establishments, containing 23 columns, all relating to manufacturing in Canada. In the Census of 1891 manufacturing was given a schedule to itself instead of, as in 1881, forming part of schedule 3. We were thus enabled to ask for returns more in detail than had been sought in the previous Census. Thus capital employed was divided for the first time into fixed and working—and the fixed capital distributed under three heads—‘In land,’ ‘in buildings’ and ‘in machinery.’ Information was also sought as to the months in which the industrial establishments were in operation, whether full time, half or quarter time, during the Census year. Columns were prepared for the registering of the horse-power employed in driving the machinery, and whether it was steam or water power.

“Schedule No. 7.—*Return of Products of the Forest*, containing 24 columns.

“Schedule No. 8.—*Shipping and Mining*, containing 25 columns.”

[A ninth schedule—*Fisheries*, containing 30 columns—was filled in by special agents.]

“In all, the schedules of 1891 contained 226 columns against 172 in the schedules of 1881. In addition, by a combination of letters and figures inserted in columns 1, 2 and 3 of the first schedule, and not interfering with the returns specially sought in these columns, the information relating to the description of materials used in building the houses, of the land, &c., was obtained.

“Practically therefore, there were 68 additional columns used in the Census of 1891.

“These Census schedules were filled up by the enumerators themselves going from house to house, each within the limits assigned to him.”³¹

Two hundred columns are an impossible number for a householder to fill up himself, assuming as an axiom the law, “that the accuracy of the investigation varies inversely as the number of questions asked.” The particulars were accordingly entered in the schedules by the enumerator. In view of the number of

³¹ Census of Canada, 1891, vol. i, p. xii.

questions also, no time limit could be given to the enumerator, who had also to contend with the difficult nature of the country, and in the remote tracts of the North-West, among the Indians, the collection of the data occupied several months. The enumeration was consequently not synchronous. The various means of locomotion of which some of the enumerators were forced to avail themselves, are described in the Report as follows :—

“In Canada the staff of enumerators numbered 4,300 persons. These had to traverse the immense area of Canada by every imaginable method of locomotion. A steamer with enumerators on board went in and out the deep indents of the Pacific Coast line as far as Alaska, thence to Queen Charlotte’s Islands, to enumerate the people. Pack-horses were required in the mountain regions of the same province to carry the enumerators and their portfolios through the valleys which run among the hills of the Rockies. Dog-trains were a necessity in Saskatchewan. To obtain the population on the northern slope of the ‘Height of Land’ in Ontario and Quebec, a canoe expedition started from the head waters of the Lievre River to go by lake and river and portages to Albany River, at James’s Bay. Camping outfits and canoes were needed to enable the enumerators to take the population in the Nipissing district just beyond the ‘Height of Land.’ The enumerators in Manitoba had, now to foot it, now to go by buckboard, and now by boat, and in one instance the man, losing himself, had to save his own life by slaying and eating his horse. Many townships in Algoma had to be taken by slow and toilsome pedestrianism. For the north shore of the Gulf of St. Lawrence a schooner had to be chartered, the enumerators put on board and dropped at different points till the Straits of Belle Isle were reached, from which point the schooner was directed to the Isle of Anticosti, the Census of which having been taken she returned to the Straits and sailed along the coast, picking up the enumerators and returning to the mouth of the Saguenay River.”³²

The first of the above schedules is accordingly the only one interesting us at present; but attention may be called to the second, as there is no registration of births and deaths in Canada, such as exists here. The most noticeable point in the first schedule is the inquiry, which we do not find elsewhere, as to the place of birth of the father and mother. A special investigation is also made concerning French Canadians and Acadians. The occupations are classified as in England, but the supplementary inquiry, as to whether an individual is out of work, has been added.

Complaint is made by the Chief Officer for Nova Scotia as to the areas. “Nova Scotia has no such permanent system of municipal sub-divisions” as exists in New Brunswick, where the system is described as admirable, and where comparisons are therefore easy. “In some instances the best that could be done to make sure that the whole area was covered by the enumerators was to take the shifting polling district as the unit of sub-division.”³²

Legal Population.—A very important difference in the Canadian Census is that the *de jure* system was adopted, *i.e.*, the

³² Census of Canada, 1891, Bulletin No. 3, p. 1.

legal and not the *actual* population was enumerated. [By the *legal* population is understood the number of people whose ordinary domicile is in the locality; the *actual* population is the number of persons who are actually present on the census night in the locality where they are enumerated.] This feature is unique among the censuses of the whole empire. The disadvantage of the system is that so many safeguards have to be adopted. For instance, seamen away for not more than three years were reckoned, if their wives and families were in Canada, that is, if the seaman's regular domicile was in Canada. Children being educated were also included. Precautions were taken to avoid duplication, and the directions respecting domestic servants especially were framed with great care to avoid this source of error. If it was not known whether an absent member of the household intended to return, the enumerator inquired whether that member had been away for more than twelve months, and he was recorded as Canadian if the answer were in the negative. But, although these instructions were thus carefully detailed so as to account for any persons who were temporarily absent, the Census Report makes no mention of any arrangements for the exclusion of foreigners temporarily present. I should however add that the Census Returns are not yet completed, so that it is only fair to give the Statistician the benefit of the doubt, and assume that such persons were excluded, as it is not specifically stated that they are included.

Hollerith Electrical Machine.—In tabulating the returns, the Hollerith electrical tabulating machine (which should, perhaps, rather be called a *totalling* machine), introduced in the United States, was used. For this purpose a card, similar in principle to that used in New Zealand, is devoted to each person; but instead of drawing lines, a hole is punched in the centre of the compartment. Each card is then successively placed on a horizontal board. This board is pierced with holes, corresponding in number to the total number of compartments on the card, and so situated that each hole is under the centre of a compartment. Under each of these holes, again, is a tube partly filled with mercury, which communicates, by means of a wire from the bottom of the tube, with the index of a counter. Above the card is a second horizontal board, on the lower side of which are springs terminating in blunted needles, these being so arranged as to dip into the tubes wherever there is a hole in the card, and thus complete an electric circuit wherever the needle meets the mercury. The electric current then moves the index of the counter through one division each time the board is lowered. By passing all the cards through the machine, the number of persons corresponding to each particular fact can be counted at once, and this number

is then written on the tabulation sheets. The machine is so arranged also as to permit of particular needles only reaching the mercury, and thus a combination of two or more particulars can be worked out by merely passing the cards through the machine. Two or three different combinations can be worked out simultaneously, provided that any one particular does not enter more than one of the combinations, *e.g.*, the religion according to education, and the infirmities according to age, could be worked out at the same time. It is, I believe, recognised that the device would not have been of so much value in the United Kingdom and the other colonies where the number of details required is not so great. Owing to the time occupied in punching the cards, as compared with that of ticking the compartments, the economy only begins to be appreciable when the combinations are very numerous.

The cost of the Census was \$525,000, of which \$414,000 were for the enumeration (local expenses), \$98,000 for compilation and tabulation (office expenses), and the remainder represented printing and incidental expenses.

It remains to be added that the returns are printed in both English and French, side by side.

Newfoundland and Labrador. — Much of the work done in connection with the Census in this colony was destroyed by the great fire at St. John's last year, and the publication of the results was consequently delayed. Two volumes have been published, the first containing the statistics of the population, and the second those of the property and productions of the colony. Besides most of the ordinary subjects, figures are given concerning the number of orphans under 15. The first volume consists almost entirely of one huge table of 400 pages. The enumeration was not synchronous.

(*d.*) *West Indies.*

In the West Indies (with which I group the *Bermudas*, *British Honduras*, and *British Guiana*) the particulars collected and the arrangements made are much the same as elsewhere, but in the smaller colonies the returns comprise only a few sheets. The principal points calling for remark are the inquiries as to colour, and to the Indian population. The return as to colour, generally "black, white, and coloured," is somewhat vague, and does not appear, according to one or two Reports, to have been entirely satisfactory; it cannot be taken as denoting the nationality. Most of the colonies also attach special importance to the particulars of the East Indians, or coolies, who immigrate (and emigrate) in considerable numbers. But there is sometimes a little confusion; they are often mentioned simply as "Indians" who, one might at

first be inclined to think, would be natives; while the Trinidad report alluding to the same people speaks of "native Indians" and "Indian immigrants" in one breath.

Bahamas.—In this Colony a census was taken of the number of vaccinated persons.

British Honduras.—The return as to the degree of education was more clearly defined than usual as regards writing, persons being required to state whether they could "write their name." One quarter of the schedules was printed in Spanish. This colony, with Queensland, and the Gold Coast, is one of the very few in which a number was added to the enumerated population, an addition of 1,400 being made to allow for persons absent cutting wood in the Republic of Honduras.

Jamaica.—This is the largest Colony (as regards population) in which no return was made concerning the religion: "on account of the too ready submission of such particulars. The tendency to show connection with some religious denomination in cases where the moral condition of the household so claiming was utterly opposed to the idea of any vital religious influence or connection was so prevalent, and the methods by which denominational relation was decided, varied so much, that the statistics of religion were of little real value."³³

The cost of the Census here was 6,306*l*.

Leeward Islands.—There was some attempt to estimate the degree of crowding, the number of persons to a house being given. An investigation is also made concerning the number of agricultural labourers to the acre, &c.

Barbados.—Particulars were required as to the employment and education of children. The occupations show two classes: the Professional and the Unemployed. The latter are sub-divided into Annuitants, Children, Inmates of asylums and hospitals, Inmates of prisons, police cells, and reformatories, Mortgagees and others, and Ex-King of Opobo—the latter gentleman occupying a column to himself. In Canada, also, "Indian Chiefs" form a class by themselves in the occupations-return.

Trinidad.—Considerable care had to be taken with regard to the returns of marriage among the Indians: Indian immigrants married according to the Christian rite, or who held registration certificates of their native marriage, were the only ones entered as married. Information as to the number of houses was also collected, but the returns being considered unreliable were not published. The arrangement of the tables differs from that usually adopted; all the particulars concerning the natives of each particular country being given separately. There is no return as

³³ Census of Jamaica, 1891, p. 1.

to colour or race, and consequently no indication of the number of whites or civilised people, or of aborigines.

British Guiana.—The number of the aborigines is only estimated, and it was quite impossible to get the names. There is a return of the number of persons in receipt of poor relief.

(c.) *Other Colonies.*³⁴

Gibraltar.—An inquiry as to tenements was made.

Maltese Islands.—A better class of enumerators was secured here than were procurable in most colonies; a higher rate of remuneration attracted a doctor, lawyers, university undergraduates, &c. There were three schedules left at each house: the householder's, the agricultural, and the live-stock schedule, the great majority, however, having to be filled in by the enumerator. The English system of classifying the occupations was generally adopted, except that dealers were separated from makers where practicable, and persons who had retired from business were classed with the unemployed. The results of the inquiry as to whether an individual was employer, employed, or working on his own account, did not justify publication. A special investigation into the families of mendicants was made.

Cyprus.—The variety of languages in this island necessitated the printing of the schedules in English, Greek, and Turkish. Several languages were also used in filling up the forms. The co-operation of the "mukhtars," or head men of villages, with the enumerators was found to be very advantageous. The Superintendent of the Census was not paid.

Hong-Kong.—Here also it was not found practicable to take the census on the same day as in the other colonies. Many of the Chinese residents are absent on the mainland during April and the beginning of May for various sacred festivals. In 1881, the Census was taken on the 3rd April, and 5 per cent. was added to the Chinese residents in Victoria and the villages, and 10 per cent. to the boat population. The necessity for estimating a portion of the population has thus been obviated by holding the inquiry at a later date (the 20th May). The only features that call for special remark in this colony are (1) that considerable attention was paid to the over-crowding among the Chinese, but the results, as recorded in the Census, are not very definite, nor do they agree very well with the results of a special Government inquiry in the preceding year; and (2) that a particular inquiry was made concerning the special kind of water-craft inhabited, just as many

³⁴ Only the more important are mentioned, and the only details given are those peculiar to the Colony.

other countries investigate the materials of which the houses are built.

In the **Straits Settlements** the census was taken on the 5th April, but in **British North Borneo** and **Labuan** it was held on the 15th February in the towns, and the figures for the country districts were collected when practicable. In this latter colony the undertaking was not particularly successful, and the endeavour to obtain statistics as to civil condition proved a failure, owing probably, at least in part, to the column for this information being headed simply "State." It was often filled in by a personal description of the individual.

Sierra Leone.—The census was taken in certain parts only. Clergymen and missionaries in many cases acted as enumerators.

Gold Coast.—A rough estimate was made of the number of persons escaping enumeration in each district, this number being set down at 205,000. A fairly exhaustive inquiry as to the number of persons occupying each house was made, and various particulars are given respecting fetishes, and the numbers belonging to each tribe (this tribal inquiry was also carried out in **Lagos**). The population here is divided into white, coloured, and black. The ages could not be taken, so that the people are divided into adults and children. In this colony no census Act was passed, as it was considered that an ordinance, with penalties laid down, would create fear amongst the natives. As exhibiting the method of dealing with the natives, and also the manner of taking the Native Census, I append the circular letter addressed by the Governor to each native king:—

GOVERNMENT HOUSE, CHRISTIANSBURG CASTLE, ACCRA,
22nd December, 1890.

KING,

"The Queen has expressed a wish to know how many subjects she has in the Gold Coast Protectorate, and has instructed you to obtain this information for her and send it to the District Commissioner.

"2. I ask you, therefore, to number the people of all the towns and villages in your country, and when you have done this to let the District Commissioner of know how many males and how many females you have in your country.

"3. I understand the way you count your people is to divide each town or village into companies, which are again subdivided into families. The heads of families are then directed to drop into a calabash, or similar article provided for the purpose, a grain of corn or a cowrie, according to the number of their people—and that these calabashes are then collected and the contents counted. You will, therefore, I know, have no difficulty in doing what I ask you.

"4. I wish you to clearly understand that I am not asking you to do this in order to tax your people, or for any purpose but your good. The Government in requiring this information has no intention to tax you or interfere with your country. I only want the information to give to the Queen. As a loyal King you will, I am sure, help me. You will see that it is for your advantage that I should know how many people belong to your country in the same way that a shepherd counts his sheep to know how many look to him for protection and care.

"5. In those of your towns where you have Hausas living, you must not forget to include them in the number.

"6. In order that you may be able to say how many males and how many females you have, I wish you to give instructions that when the numbering takes place, different articles are to be used for each sex, that is to say, Indian Corn for males, and Cowries or Kernels for females.

"I am, King,

"Your good Friend,

"W. BRANDFORD GRIFFITH,

"Governor."

Mauritius.—The schedule was printed in French and English.

The remaining colonies call for no particular remark; in some of the smaller ones, *e.g.*, **Fiji Islands**, **St. Helena**, the **Falkland Islands**, the Census was very far from being elaborate, and the returns have not always been printed. In the case of the three above-mentioned, for instance, they were forwarded to the Colonial Office in manuscript.

PART IV.—*General Comparisons.*

Enumeration.—In only two of our possessions—India and Canada—is it specially laid down that the schedule should be filled up by the enumerator, and in the first-named this does not apply to Europeans; in all the other portions of our empire the form was left at the house, though the enumerator had practically always to enter in the particulars himself, when on his rounds to collect the schedules, wherever the population was not white. In dealing with such natives as may be designated savages, also, the schedule did not leave the enumerators' hands. It is, of course, preferable that the schedule should be left with the householder, and collected complete in all its details the next day, such a proceeding saves the time of the enumerator (and is consequently cheaper), and likewise saves a few days in bringing out the preliminary results, also a desirable object. The English system decreases the liability of error: all statements resting on the householder's own authority, erroneous entries through carelessness in taking down the answers cannot occur. The co-operation of the people generally is also to some extent enlisted in this way. On the other hand, writing more especially of the occupations, Dr. Ogle holds that "a census, taken on the ordinary method, where the schedule is filled up by the householder himself or some member of his family, who, too commonly, neither cares for accuracy nor is capable of it, does not supply data which are suitable for minute classification, or admit of profitable examination in detail." But a

still more important advantage is that the method renders the deliberate falsification of the returns, for pecuniary, political, or other reasons, both a difficult and a dangerous proceeding. In some foreign countries (and certain of our own colonies also), census officials are paid by results, a fixed sum being given for every head of the population recorded. If then the enumerator writes in the particulars himself, the temptation to exaggerate the numbers must in many cases be almost irresistible, for who is to say that no names have afterwards been added to those indicated by the householder? In countries, again, where representation in the Legislature depends on the number of the inhabitants, the opportunities afforded for bribery must be very numerous.

It may also be pointed out that by fixing the following day for the collection of all the schedules, any loitering on the part of the enumerator is prevented; while the danger of loss or damage to the form increases with the time it remains in the householder's possession.

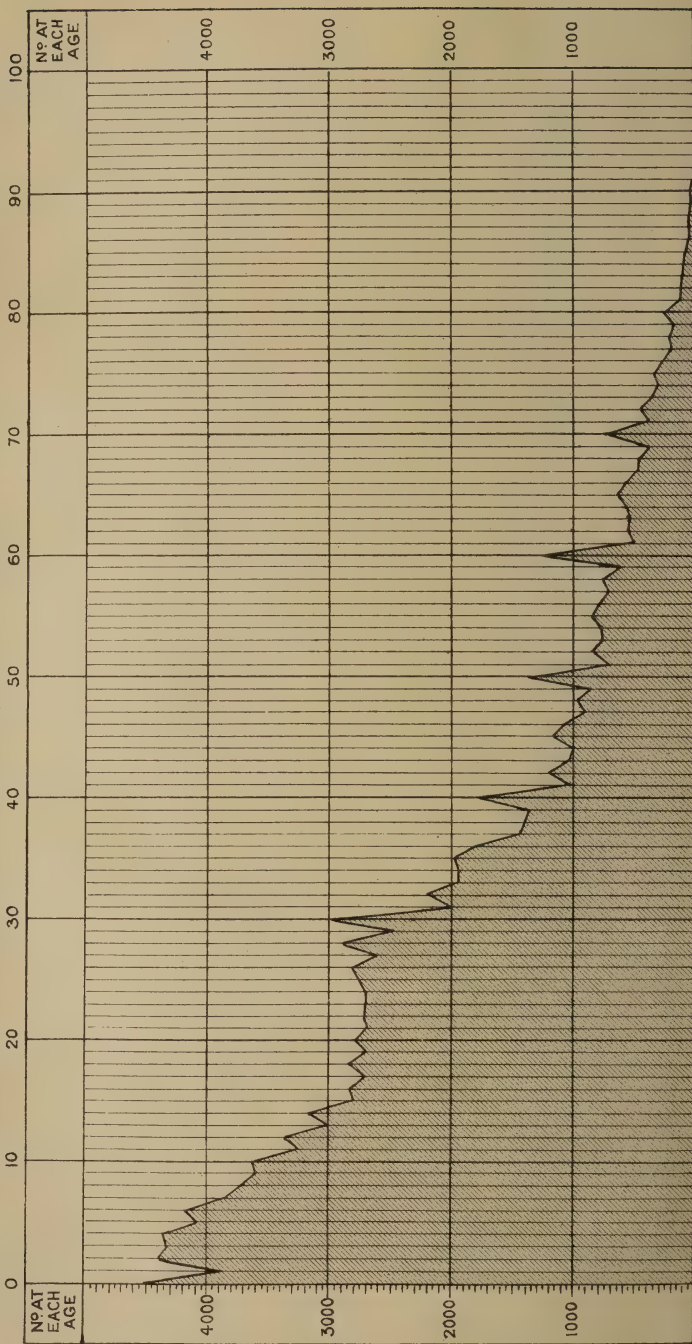
Satisfaction is not universally expressed with the enumerators and supervisors (*e.g.*, in New South Wales), the chief complaint being that the pay was not sufficiently high to remunerate them for the labour involved: indeed the Maltese Census Superintendent is the only one who distinctly expresses his approval of the salaries allotted to his staff. In Ireland, and to a great extent in Queensland and Western Australia, the police were utilised, but the selection of the enumerators was very generally left to the supervisor, subject to the nominal approval of the Superintendent. Where a regularly trained body of men can be obtained, they are of course to be preferred to persons whose best qualification may be that they are men to whom the supervisor is willing to "do a good turn." But such a trained staff was not usually to be had.

I now proceed to consider briefly some of the different subjects which form the basis of an investigation in our various dominions, and which I have endeavoured to indicate roughly in Table A. I shall accordingly take these subjects in the same order as in the table. (Columns 1 and 2 need, I think, no explanation.)

Crowding in Houses.—This column (No. 3) is intended to show which countries have made a special inquiry into the subject of overcrowding, apart from any statistics of the density of the population, which, when not stated definitely, can invariably be deduced from the area and the population. The investigation was made in only a few cases, and differs materially in different countries: it is rather a special investigation, and each superintendent accordingly selected the means which best suited his purpose. The completeness of the inquiry also varies enormously.

In *England* all persons living in less than five rooms were

DIAGRAM 1. NUMBER OF PERSONS IN TASMANIA LIVING AT EACH YEAR OF AGE ACCORDING TO CENSUS SCHEDULE; SHOWING THE TENDENCY TO CLUSTER AT ROUND DECENNIAL PERIODS.



required to state the number of rooms occupied. These are all tabulated in the returns showing the number of persons to a room, with the total number in tenements of four rooms or less in each sanitary district. This is a new inquiry, and was aimed especially at tenements. In the Report of the Parliamentary Committee mention is made of the supposed omission of names at the previous census, in houses which were overcrowded, from fear of the law,³⁵ and this understatement would be rendered more probable by an exact inquiry into the number of rooms and of persons occupying them. Nevertheless the errors must be trifling in comparison with the value of the inquiry.

In *Scotland*, the inquiry was not confined to tenements: the returns give the number of families and persons in a family occupying houses with a specified number of rooms in Scotland, in the "Town Group" and "Rural Group," and in the largest towns.

In *Ireland* the houses were divided into four classes, as also was the accommodation provided for each family. The details of this classification have already been given above.

The only colonies seriously attempting an investigation of this nature are *Barbados* and *Malta*. The results of the *Hong-Kong* inquiry (apart from that made by the Government in the preceding year) do not seem to be sufficiently definite to warrant the inclusion of that dependency in the list of colonies making this return.

Ages.—These are almost invariably grouped in five-year periods after the first five years (in England and Canada they are in ten-year groups after the age of 25). Some of the Australian colonies give the numbers at each year of age up to 20, and also the number (for the whole colony only) of the population at each year of age; and besides this gives the number at each year of age above 80. This grouping of the ages is open to objection from several causes. In the first place there is a decided tendency for the ages to congregate about the round numbers. This is of course due to a person's ignorance of what his age really is; a man perhaps knows only that he is "about 30," and he consequently records himself as 30. To judge by the annexed diagram (I) this ignorance would appear to be more widespread than is usually imagined.

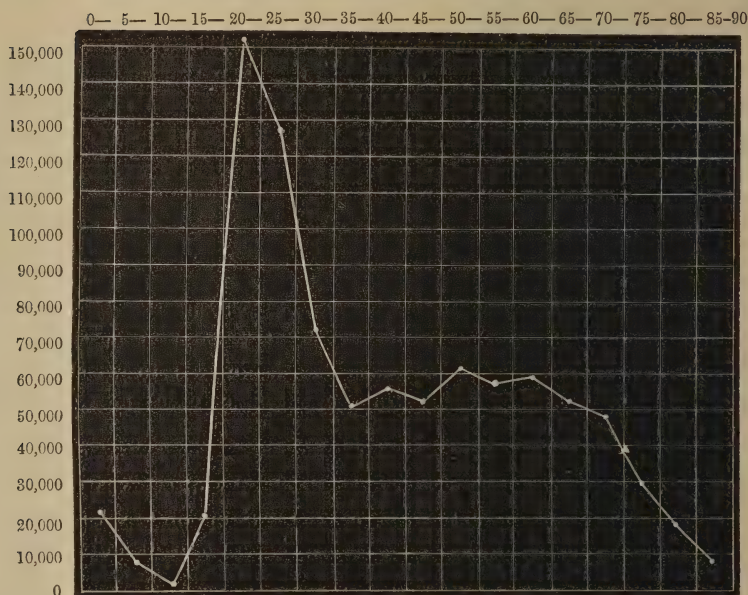
A second cause is more difficult to deal with. It is due to the ladies, many of whom, in spite of the inviolability of the Census returns, return themselves as younger than they really are. Although this paper does not deal with results, yet I am

³⁵ See especially in the *Report of the Census Committee*, 1890, the evidence of Mr. F. Tupper (p. 41) and Mr. C. J. White (p. 81).

tempted to quote some rather remarkable facts from the English and French Censuses as statistical demonstrations of the above statement. In the present English Census returns, the number of females aged 20—25 is greater than the number aged 10—15 ten years ago, although the former are obviously only the survivors of the latter (apart from any difference caused by migration). Diagram II, also (drawn from the figures of the 1891 Census)

DIAGRAM II.—*Excess of Females over Males at each age.*

[Census of England and Wales, 1891.]



shows a great excess of females over males aged 20 to 30, though the numbers are somewhat exaggerated by the fact that many men of those ages are abroad. France is, however, probably an extreme instance, all the later censuses showing a much greater number of females aged 20—25 than there are aged 15—20, and from the returns of 1886 it would appear that only about five-sixths of the number of females returned as between 20 and 25 years old are really of that age. There are other causes of the mis-statement of ages; there is evidence to show that many ladies who have passed the critical ages of 30, 40, 50 . . . have returned themselves as 29, 39, 49 . . . Young people, in view of obtaining employment, sometimes return themselves as above their real age, while elderly people, with the same object, understate their age. Very old people again constantly exaggerate

their years; in fact there are very numerous causes of error, nearly all of which however (except the second) affect the round numbers. All such errors, it would seem, could be avoided by making the age-groups 22—27, 27—32, 32—37 . . . instead of 25—30, 30—35, 35—40 . . . Mr. H. H. Hayter, the Victorian Census Superintendent, has adjusted the ages, and “arrived at the probable age by distributing the numbers into single years by a process of graduation.” These corrected results have then been used throughout the portion of the Census Report which relates to the ages, but not in the parts relating to education, conjugal condition, sickness and occupations. The *probable* numbers at each age are also given in the English Census. In Australasia it must not be forgotten that the question is complicated by a considerable immigration, the new-comers being especially between 20 and 30. Mr. Hayter also expresses the opinion that persons “generally hesitate at passing over a quinquennial or decennial period, and that those, for instance, whose age might really be “33 or 34 would return it as 30.”³⁶

Divorced Persons.—This inquiry was sanctioned by the Australasian Census Conference, and was adopted in most of those colonies, as well as at the Cape, but the results were not invariably tabulated, owing to their meagreness. It is at the best an unsatisfactory question to ask, the objections preferred against an inquiry into mental diseases applying with equal force here, and the results must always be more or less untrustworthy, especially when the number of divorced persons so returning themselves is small.

Religions.—All the larger colonies and Ireland collected returns concerning the religion, England and Scotland thus standing practically alone in refusing to enumerate the members of the various religious bodies. The only colonies in Table A which follow our example in this respect are Jamaica (for the reasons mentioned above), Natal, the Leeward Islands, British Guiana, the Straits Settlements, and Hong Kong, and these have a large percentage of pagans. Except in India, Ceylon, Canada, the return was almost invariably voluntary, and in no part of the world is any mention made of difficulty in obtaining the particulars, the number of persons declining to state their religion being very small.

Various objections have been raised to the introduction of this return into the English Census. It is stated that such an investigation is too inquisitive in its nature, and it is often asserted that dissenters would object on the ground that persons who attend the church and the chapel indifferently, or who do not attend either,

³⁶ Census of Victoria, 1891, General Report, p. 85.

would return themselves as belonging to the Church of England, and thus swell the numbers of the latter to the disadvantage of their own community. But the Census is taken in Ireland, where it might be expected that any animosity between the various religious sects would be quite as accentuated as on this side of St. George's Channel. Dr. Grimshaw and his colleagues, however, make no mention of any objections, nor do they appear to have any reason to suppose that the returns are untrustworthy. Perhaps the most serious objection is that raised by Dr. Ogle, viz., that it introduces a new column into the schedule. If it is absolutely necessary to restrict the schedule to eight columns, it seems preferable to do away with that relating to infirmities (though I should be the last to deny the utility of that return), as to the accuracy of which considerable doubt exists.

The advantages of a religious census are many. Very interesting facts might be brought out by the combination of such statistics with others; those of education for instance, as is done in Ireland. Especially would much valuable information be obtained when religious differences correspond to ethnic variety. Such a census again, if it had been taken in 1891, would have afforded some definite ground on which to base arguments against, or in favour of, the disestablishment of the Church. At present, the only figures on the subject are the results of local censuses or estimates made by private individuals on one side or the other, the accuracy of which is promptly challenged, in more or less vigorous language, by the opposite party.

Occupations.—All the Governments of the countries specified in Table A demanded a return as to occupations, but in most of the small colonies no attempt was made at classification, the occupations, in such cases, being simply arranged in alphabetical order, with the numbers engaged in each. As regards the larger countries, it may be said that there were two main classifications (apart from the Indian), which may be denoted the *English* and the *Australian*.

The essential difference between the English and Australian classifications is that the latter distinguishes between "bread-winners" and "dependents." This system has already been explained above. It was adopted throughout Australasia, and at the Cape of Good Hope, but the latter did not distinguish between employer and employed, nor did it take account of those out of work (*i.e.*, during the week preceding the Census).

The English system was adopted in Canada, with some modifications, but the Canadians named the classes according to the Australian nomenclature of the breadwinner, viz., Primary Producers (corresponding to the English iv), Distributors (iii),

Modifiers (v), Personal and Domestic service (ii), Professional service (i), Non-productive occupations (vi).

A distinction, amongst traders, between *makers* and *dealers* has constantly been suggested. But there are so many persons who both make and sell goods, or who are manufacturers of a special article, while selling other similar articles, that it has been generally felt impossible to obtain sufficiently accurate statistics on this head, and very few Governments have attempted it. Such a distinction was made in Australia and the Maltese islands.

Another source of difficulty is the "double occupations;" many persons having more than one means of livelihood. As a general rule when a person returned himself as engaged in more than one occupation, the *first* only was tabulated. It was usually taken for granted that the principal employment would be placed first, but in some instances the instructions definitely required this to be done. It would perhaps be more satisfactory if both were counted, although, if the number of persons engaged in each occupation were added together, the total thus reached would surpass that of the whole population, so that this solution of the difficulty would be of little value where the occupations are classified. On the other hand, if the chief means of livelihood only is recorded, the real importance of most occupations is somewhat understated, and this misrepresentation would be most marked in the case of what may be called "by-occupations."

Elderly persons who have retired from business are also a source of error; they return themselves sometimes as following their former occupation, and sometimes as persons of independent means.

The occupations return, while being one of the most important, is at the same time one of the most unsatisfactory. It can scarcely be an international return, the nature of the country and the habits of its people necessarily engender variations in the occupations. Each colony was thus bound to act independently, the only attempt at uniformity being among the Australians. The unsatisfactory character of the classification again is sufficiently proved by the fact that at every census important modifications are introduced, which render it extremely difficult to follow the progress of any particular occupation: this applies more especially to the United Kingdom. There is a great deal to be said, and a great deal has been said,³⁷ against every existing system, but perhaps the least unnatural is the Australian. Much difficulty is avoided by placing the occupations in alphabetical order. This is

³⁷ See, against the English especially, the evidence of Professor A. Marshall, in the "Report of the Census Committee," 1880, p. 60.

very generally done, even where the employments are classified, and the alphabetical is then supplementary to the classified list.

Education.—The ability to read and write is very generally recorded, except in England and Scotland. I do not quite know how much is implied by the rather vague terms “read” and “write.” The only colony I have found specifying at all the degree of education in this respect is British Honduras, where the proficiency necessary to answer the latter question truthfully is ability to write one’s own name. In many countries a specific inquiry is made concerning the education of children (*vide*, for instance, the Tasmanian schedule). This applies only to children of a particular age, usually 5 to 15. Parents are required to state *where* the child is being educated: at a Government school, private school, at home, &c. Very little value can, as a rule, be attached to the number of “scholars” as given in the occupations return. Some of the colonies, especially in Australia, also made an investigation into the number of university graduates.

The inquiry as to the most elementary degree of education, namely, ability to read and write, is made throughout our colonies, and in some of them the results are very curious. But in a country like England, where primary education is now compulsory, I am not sure that it would be worth while to ask for such a return, as the number of ignorant persons in this respect must now be very small, and will in time become insignificant, and no practical conclusions could probably be drawn from them. But an inquiry into secondary education, if carefully conducted, would be more valuable, and some interesting facts would probably be brought to light concerning the progress of higher education, which is at the present time being rather rapidly developed.

Sickness and Infirmary.—The records concerning sickness and infirmity are on all sides admitted to be more or less untrustworthy, although, for comparative purposes, from decade to decade, they have their value, the latter especially. A natural reluctance is always felt to entering one’s child as an idiot. The inquiries as to infirmities include almost universally the blind, deaf and dumb (or either alone), the insane, and idiots. Probably the most accurate of these returns are the Irish, for two reasons: (1) because the schedules are collected by the constables who are attached to the district in which they act as enumerators. They are thus nearly always acquainted with every soul in the place, and in looking over the schedules as they receive them on the morrow of the census day, they can at once detect whether any “infirm” have been omitted. The second reason is that in every case where an individual is returned as suffering under any one of these infirmities, a second and more minute investigation is made

concerning them. The Australasian Colonies and the Cape (as well as Ireland) all give particulars as to the number of sick on the census day, but whether they are as careful concerning its definition as is Dr. Grimshaw (the Irish Registrar-General) I am unable to say. In most tropical countries statistics of lepers are collected, and in some colonies epilepsy and paralysis are included among the infirmities.

Race and Language.—Special inquiries as to race were generally made wherever there is in the population a foreign or native element, which, from political, economic, or other causes, is of more than usual importance. Thus, in all the Australasian colonies (except South Australia), especial attention was paid to the Chinese; and in most of them the aborigines (including the Maoris in New Zealand) are tabulated separately. In Queensland also, where Kanaka labour is so important a factor in the success of the sugar plantations, the Polynesians are carefully distinguished from the rest of the population. In most of the West Indies, the East Indian coolies are the object of a special investigation; and in Canada details are given of the French Canadians. England, Scotland, and Ireland are the only countries where particular inquiries are made regarding languages which are gradually dying out (Welsh, Gaelic, and Irish). In many colonies nationality and language go hand in hand, as is the case with Chinese. In Malta and Cyprus also, where the inquiry is nominally an investigation into the language spoken or written, the language denotes the race.

Tabulation.—As regards the tabulation of the results, the use of the “card system” in Australia and the Cape seems to have greatly expedited the publication of the full returns. The checking of the successive operations is, I believe, more expeditiously performed under the English system, although in other respects the cards seem much simpler, and more handy. But this is a practical question of which it is not easy for anyone outside the Census Office to judge. I have not found that any of the colonial census Superintendents recommend the Hollerith electrical tabulating machine, except in Canada, where it was used, and where the multiplication of the combinations is so enormous that much time is saved by its use.

Several countries, noted in Table A, combined returns of the condition of agriculture and industry with the census proper, the Canadian statistics, judging by what we are promised, being the most elaborate, while several of the Australasian returns on these subjects are by no means insignificant.

I pass on now to legislative questions.

Quinquennial Census.—The quinquennial census has been advocated over and over again, and I have but little to add to

the arguments that have been brought forward in its favour. Only two colonies have as yet adopted it: namely, Queensland and New Zealand; but the Census Act of 1891 of Western Australia is so worded as to admit of its possibility. In Canada (*i.e.*, what is now the province of Ontario) a census was taken annually from 1824 till 1842, but it is now decennial, although the North West Territories and Manitoba enumerated the population in 1885 or 1886. It is generally admitted that ten years is too long an interval to elapse between the two censuses, and the quinquennial enumeration was strongly recommended by the Committee appointed by the House of Commons prior to the Census, and also by the Committee appointed by our Society. An *annual* census, indeed, has been urged by no less an authority than the late Sir Edwin Chadwick. He proposed that the registrars should issue schedules to householders throughout the kingdom, just as the income tax schedules are at present distributed. Although the error in the estimated population for the whole of England and Wales has as yet never been very great, still in certain districts it has proved very large, one under-estimate in 1881 amounting to 36 per cent.³⁸ In the continent of Australia the population was over-estimated in 1891 by 218,278, the real total being 3,086,614 during the decennium, and this was in spite of the very careful registration of births, deaths, and migration by sea and by rail. Where the population is over-estimated, it follows that the death-rate is under-estimated; and many a town may be priding itself on its excellent sanitary condition, while its death-rate may really be considerably above the normal. The intermediate census need not be so elaborate as the decennial, the most important desideratum being a knowledge of the number of the people. But this subject has been so often and so ably treated,³⁹ that there is no need to insist more upon it now. The only obstacle to the change appears to be that the Government cannot make up its mind to incur the extra cost.⁴⁰

³⁸ "Report of Census Committee," 1890, p. 116.

³⁹ *E.g.* by Dr. G. B. Longstaff, "Journal of the Royal Statistical Society," Sept., 1889, p. 436.

⁴⁰ Since writing the above, I have come across the following striking illustration of the need of a more frequent census: During the decade 1881 to 1891, the number of coal miners in England and Wales increased by 35.5 per cent., and those in Glamorganshire by 72 per cent. (Census of England and Wales, General Report, p. 54). These increases are borne out by the Reports of the Inspectors of Mines. But from these same Reports it appears that had the Census been taken in 1875 and 1885, there would have been an actual *decline* in the numbers employed in coal mining, instead of an increase treble that of the population as a whole, while in Glamorganshire the increase was only about 20 per cent. As a matter of fact, the coal miners in England and Wales increased by about 10 per cent. in the seven years 1881-88, and by about 22 or 23 per cent. in the three years 1888-91.

In Queensland a permanent Act for taking the Census was passed by the local Parliament in 1875; indeed it required another Act to alter it, in 1891, so as to make the date of the Census fit in with the rest of the Empire. But Queensland was, in this, only following the lead of New Zealand, where a permanent Act was passed in 1851. This provided for three censuses in a decade, but it was repealed in 1858, and after several changes, an Act was finally passed in 1877, requiring the Census to be taken every fifth year. In Canada, the "Census and Statistics Act" was passed in 1879, in virtue of which the census is taken every tenth year, and power to collect other statistics from time to time is also given to the Department of Agriculture. Amongst the Consolidated Statutes of Newfoundland (1872) is one appointing the Census to be taken in 1879 (this date was afterwards changed), and at least every tenth year afterwards. On the present occasion, the Act passed in Western Australia provides that "a like census" in any subsequent year may be taken on any day to be appointed "by the Governor in Council by proclamation in the Government Gazette."

Census Office.—I do not, however, propose that the English Parliament should merely pass a permanent Act for taking the Census, because that is not enough. What is required is a permanent Census Office. It need not be large, and could perfectly well (indeed, it had better) be a branch of the General Register Office. The essential thing would be to have two or three competent men in it, with a few clerks under them, who would be thoroughly acquainted with the methods of census-taking. A great deal of the preliminary business of verifying and correcting all the alterations in boundaries (the Office might be arbiter on such questions) would then be unnecessary, for all this would have been done in the office during the intervals, and when the time for taking the actual census arrived, the work could be carried out on lines already clearly laid down. As things now are, it is only the highest officials connected with the Census who have any notion of what is required; the whole subordinate staff is, so to say, picked up anywhere. Of course for the census itself, temporary clerks would have to be engaged to perform the abstractions and tabulations, but very little teaching would suffice for this: under the present system the teachers have first of all to find everything out for themselves. Even the highest officials have their recollection of the difficulties blunted after a lapse of seven years. In India, the preliminaries were settled much earlier, and all the Reports of the provincial superintendents contain suggestions for future enumerations, written whilst their experience was still fresh in their memories, so that their difficulties are at least placed on record.

A permanent office might also conduct other investigations during the interval between the censuses, or the Census itself might even be split up into two distinct inquiries at separate times. A feeling has been expressed in more than one quarter that the inquiry as to occupations ought to be conducted apart from the Census altogether. This would relieve the present schedule of a particularly awkward column, a relief which would probably tend to increase the accuracy of the other returns. The occupations return might thus be made to cover a wider field, and a mass of information on the condition of the different trades, concerning which at present we know nothing, could be elicited.

Disadvantages of a synchronous census throughout the Empire.—In taking the Census simultaneously in every part of the British Dominions, it was of course hoped that it would be practicable to make some comparisons between the various portions of the Empire, but the methods employed, and the information sought, differed so essentially (and necessarily so), that very few tangible comparisons can be deduced. The exact population on a single day cannot be stated (and I do not think this an absolutely essential feature), since the largest of our possessions enumerated its inhabitants nearly six weeks earlier than the rest. Canada adopted the *de jure* system; and although the difference between the actual and the legal population may not be very great, yet for the accuracy presupposed by a simultaneous census, the error thus introduced should not be overlooked. The Australian and Cape schemes approach most nearly to our own, but in their case the returns of occupations are classified on entirely different lines. For a synchronous census throughout the Empire, the date selected, chosen primarily as the most convenient for the United Kingdom, was probably as suitable as any; though, as we have seen, it created some difficulties in certain parts of Australia. But beyond the somewhat sentimental interest of being able to say that the population of the whole British Empire is so much on a certain day, I do not see that the advantages of a synchronous census by any means balance the disadvantages attaching to the time of year in some colonies; and it appears to me that it would be preferable to allow each colony to make its own arrangements concerning dates, which should, however, be as near to each other as circumstances compatible with strict accuracy permit. Estimates, always unsatisfactory features of a census, such as were made in Queensland and British Honduras would not then be necessary (though in Queensland the omissions from non-enumeration were only partially due to the unsuitability of the season). Hong-Kong took the matter into their own hands, and chose another date with the express purpose of avoiding the estimate introduced in 1881.

But as regards subjects on which comparisons can be made, there seems to be no reason why the classification adopted in the tables should not be similar. All countries, for example, might very well adopt the same age-groups, whether quinquennial or decennial. International population returns have often been suggested, especially by Dr. Körösi⁴¹ (Director of the Statistical Bureau of the City of Buda-Pesth), and his plans have been recommended at more than one meeting of the International Statistical Institute (or of its predecessor the Congress). The number, sex, ages, conjugal condition, birth-place, and religions of the population could all form the object of an investigation on international lines. Nationality would at present be more difficult, since the legislation of different Governments varies on this subject; while in the case of occupations and infirmities, so many other considerations require to be taken into account that comparisons would be somewhat fallacious.

In comparison with the whole Empire our own islands form a very small and compact group, in which the conditions of life are far less diverse than they are in some of our more important possessions. Yet for this small area three separate organisations on (at least in two cases) entirely different lines are required to enumerate the populations. But, in view of the present general tendency towards separation, I hardly dare suggest that the three kingdoms should be united for the purpose of taking a census.

APPENDIX

In the following Table (A), a cross (×) placed against any country in any particular column indicates that inquiry was made in the Census of that country concerning the subject at the head of the column. It must not be assumed that the same facts are collected, or that the inquiry was made in the same manner, in two colonies against which a cross is placed in any one column. An absolute blank indicates that I have no information: this is almost invariably due to the census returns not being yet complete. A few remarks concerning some of the columns are necessary.

⁴¹ See his *Projet d'un Recensement du Monde*. (Paris, 1881.)

Col. 3. (Crowding in houses.) Only those countries are deemed to have made an investigation into this subject, which give definite information concerning the number of persons or families living in a certain number of rooms, or which have made some similar endeavour to ascertain the degree of overcrowding. The scope of the inquiry differs in every case.

Col. 4. (Ages.) The ages of savages are nowhere ascertained, but they are often divided into children and adults. All the countries mentioned in the table record the ages by annual, quinquennial, or decennial periods, or by a combination of such periods.

Cols. 9—12. (Occupations.) The returns on this subject are very diverse; in some colonies the classification is, on the whole, similar to the English, in others it is like the Australian, while in the smaller colonies it is often alphabetical. In the case of the unemployed (Col. 11) only those persons were returned as such who had not been at work during the week preceding the census. The Australasian Colonies and the Cape divided all classes into Breadwinners and Dependents (Col. 12).

Col. 14. (Receiving Education.) This column only includes those countries where a special inquiry as to the education of children was made. The question was generally definitely asked: Where is the child receiving education (at school or at home, &c.)? The age of the children in this category was usually limited to 15. In some cases also, the inquiry included secondary education, and a return was made of university and other students. In every country the number of "scholars" can be found from the occupations-return.

Cols. 15—18. (Sickness and infirmities.) These are also special inquiries; apart from a mere enumeration of the inmates of hospitals and asylums, which were generally recorded throughout the Empire.

Cols. 23, 24. (Agricultural and Industrial Statistics.) Many colonies utilised the opportunity presented by a census of "taking stock" of the wealth of the country—agricultural, industrial, or both.

Col. 25. (Number of Years between each Census.) In some countries the Census has not hitherto been decennial, or the date was altered on the present occasion so as to fall in with the arrangements for a synchronous enumeration throughout the Empire. I assume that it will henceforth be taken decennially in those countries.

APPENDIX : TABLE A.—Scope of the different Censuses.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
	Number and Sex.	Houses.	Crowding in Houses.	Ages.	Con-jugal Condi-tion.	Divorced.	Birth-place.	Reli-gion.	Occupations.				Education.		Sickness and Infirmary.				Special Inquiries.		Schedule left at House.	Card System used.	Agricul-tural Statistics Collected.	Indus-trial Statistics Collected.	Years between Census.
									Number in each Profes-sion.	Em-ployers or Em-ployed.	Unem-ployed.	Bread-winners or Depen-dents.	Read and Write.	Re-ceiving Edu-cation.	Blind, Deaf and Dumb, Mental.	Sick-ness.	Lepers.	Epileptic and Paralytic.	Race.	Lang-uage.					
England and Wales	x	x	x	x	x	—	x	—	x	x	—	—	—	—	x	—	—	—	—	W.	x	—	—	—	10
Scotland	x	x	x	x	x	—	x	—	x	x	—	—	—	x	x	—	—	—	—	G.	x	—	—	—	10
Ireland	x	x	x	x	x	—	x	x	x	x	—	—	x	x	x	x	—	—	—	I.	x	—	*	—	10
India	x	x	—	x	x	—	x	x	x	—	—	—	x	x	x	—	x	—	—	x	—	—	—	—	10
Ceylon	x	x	—	x	—	—	x	x	x	—	—	—	x	—	x	—	—	—	—	—	x	—	—	—	10
Victoria	x	x	—	x	x	x	x	x	x	x	x	x	x	x	x	—	—	x	Ch. A.	—	x	x	x	—	10
New South Wales†	x	x	—	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Ch. A.	—	x	x	x	x	10
S. Australia†	x	x	—	x	x	—	x	x	x	x	x	x	x	x	x	x	—	x	A.	—	x	x	x	—	10
W. Australia	x	x	—	x	x	x	x	x	x	x	x	x	x	x	x	x	—	x	Ch. A. H.	—	x	x	x	—	10
Queensland	x	x	—	x	x	—	x	x	x	—	—	x	x	x	—	x	—	—	Ch. P.	—	x	x	—	—	5
Tasmania	x	x	—	x	x	x	x	x	x	x	x	x	x	x	x	x	—	x	Ch. H.	—	x	x	—	—	10
New Zealand	x	x	—	x	x	—	x	x	x	x	—	x	x	x	x	x	—	x	Ch. Mao.	—	x	x	x	x	5
Cape Colony.....	x	x	—	x	x	x	x	x	x	—	—	x	x	x	x	x	x	x	x	—	x	x	x	—	10
Natal.....	x	x	x	x	x	—	x	—	x	—	—	—	—	—	—	—	—	—	In.	—	x	—	—	—	10
Canada†	x	x	—	x	x	—	x	x	x	x	x	—	x	—	x	—	—	—	F.	—	—	†	x	x	10
Newfoundland.....	x	x	x	x	x	—	x	x	x	—	—	—	x	x	x	—	—	—	—	—	—	—	x	x	10
Jamaica.....	x	x	—	x	x	—	x	—	x	—	—	—	x	—	x	—	—	—	E.I.	—	x	—	—	—	10
Leeward Islands	x	x	—	x	x	—	x	—	x	x	—	—	—	—	x	—	x	—	—	—	—	—	—	—	10
Barbados	x	x	x	x	x	—	x	x	x	—	—	—	—	x	x	—	x	—	—	—	x	—	—	—	10
Trinidad	x	*	—	x	x	—	x	x	x	—	—	—	—	—	x	—	x	—	E.I.	—	x	—	—	—	10
British Guiana.....	x	x	—	x	x	—	x	—	x	—	—	—	x	—	*	—	*	—	E.I.	—	x	—	—	—	10
Malta	x	x	x	x	x	—	x	x	x	*	—	—	x	—	x	—	—	—	— {	Mal. It.	x	—	x	—	10
Cyprus	x	x	—	x	x	x	x	x	x	—	—	—	—	—	x	—	x	—	—	x	x	—	—	—	10
Straits Settlements	x	x	—	x	x	—	x	—	x	—	—	—	—	—	—	—	—	—	—	—	x	—	—	—	10
Hong Kong	x	x	*	*	—	—	x	—	x	—	—	—	—	—	—	—	—	—	Ch.	—	x	—	—	—	10
Gold Coast	x	x	—	*	—	—	—	x	x	—	—	—	—	—	—	—	—	—	*	—	—	—	—	—	10
Mauritius	x	x	*	x	x	—	x	x	x	—	—	—	—	x	x	—	—	—	E.I.	—	x	—	—	—	10

* See, in Part III, the Colony referred to.

† Census returns not yet complete.

‡ Hollerith Electrical Machine used.

Col. 19.

A..... = Aborigines.
 Ch. = Chinese.
 E.I. = East Indians.
 F..... = French Canadians.
 H. = Half Castes.
 In. = Indians under Indenture.
 Mao. = Maories.
 P..... = Polynesians.

Col. 20.

G. = Gaelic.
 I. = Irish.
 It. = Italian.
 Mal..... = Maltese.
 W. = Welsh.

FORM OF HOUSEHOLDER'S SCHEDULE.

ENGLAND AND WALES.

(Size of Schedule 16½ by 10 in.)

LIST of the MEMBERS of this FAMILY, of VISITORS, of BOARDERS, and of SERVANTS, who SLEPT or ABODE in this Dwelling on the NIGHT of SUNDAY, APRIL 5TH, 1891.

Cols.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
	NAME and SURNAME.	RELATION to Head of Family.	CONDITION as to Marriage.	SEX.	AGE Last Birthday.	PROFESSION or OCCUPATION.				WHERE BORN.	If (1) Deaf and Dumb. (2) Blind. (3) Lunatic, Imbecile, or Idiot.
	<p><i>No Persons ABSENT on the Night of Sunday, April 5th, to be entered here; EXCEPT those who may be TRAVELING or out at WORK during that night (and are not elsewhere returned), and who RETURN HOME ON MONDAY, APRIL 6TH.</i></p> <p>Write after the Name of the Head of the Family, the Names of his Wife, Children, and other Relatives; then Visitors, Boarders, and Servants.</p>	State whether Head, or Wife, Son, Daughter, or other Relative, Visitor, Boarder, or Servant.	Write either "Married," "Widower," "Widow," or "Single," opposite the Names of all Persons, except Young Children.	Write "M" opposite Males, and "F" opposite Females.	For Infants under One Year, state the Age in Months, writing "Under 1 Month," "1 Month," "2 Months," &c.	Before filling up Columns 6, 7, 8, and 9, you are requested to read carefully the Special Instructions printed on the other side.	Employer.	Employed.	Neither Employer, nor Employed, but working on own account.	Opposite the Names of those born in ENGLAND and WALES, write the COUNTY, and TOWN or PARISH. If born in SCOTLAND, IRELAND, the BRITISH COLONIES or the EAST INDIES, state the Country or Colony. IF BORN IN FOREIGN PARTS, write the particular State or Country; and if also a BRITISH SUBJECT, add "British Subject," or "Naturalized British Subject" as the case may be.	Write the precise Infirmary, if any, opposite the name of the Person; and if the Infirmary dates from childhood, add "from Childhood." Do not use such a general term as "Afflicted" or "Infirm."
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16											
17											

If you occupy less than five rooms write in this space the number of rooms occupied by you.

I declare the foregoing to be a true Return, according to the best of my knowledge and belief.

Witness my hand,

(Signature) _____

FORM OF HOUSEHOLDER'S SCHEDULE—continued.

CENSUS

OF

ENGLAND AND WALES,

1891.



No. _____

HOUSEHOLDER'S SCHEDULE.

*Prepared under the direction of the Local Government Board,
pursuant to the Census (England and Wales) Act, 1890.*

The following compartments are to be filled up by the Enumerator.

Civil Parish or Township.	
City, Town, Village, or Hamlet.	
Sanitary District.	
Street, Square, &c., or Road.	
Name or No. of House.	
Name of Occupier.	

TO THE OCCUPIER.

This Paper must, in compliance with the Act, be filled up by the OCCUPIER or person in charge of the dwelling.

If a house be let or sub-let to separate Persons or Families each Occupier must make a return for his portion of the house upon a SEPARATE SCHEDULE.

Before filling up the Paper all the Instructions printed in the Headings and on the back of the Schedule should be carefully read.

This Paper will be CALLED FOR ON MONDAY, APRIL 6th, by the appointed Enumerator,

and it is necessary that you should have the answers written in the proper columns early on the morning of that day in order that he may not be delayed. It will be his duty, under the Act, to complete the return if defective, and to correct it if erroneous. Any person authorised by you may write in the particulars if you are unable to do so yourself.

Persons who refuse to give INFORMATION, or who wilfully give FALSE INFORMATION as to any of the required particulars, are liable, on summary conviction before Justices, to a Fine of Five Pounds.

The Return is required to enable the Local Government Board to complete the Tenth Census. The facts will be published in General Abstracts only, and strict care will be taken that the Returns are not used for the gratification of curiosity, or for other purposes than those of the Census.

BRYDGES P. HENNIKER,
Registrar-General.

Approved by the Local Government Board,
CHARLES T. RITCHIE, President.

INSTRUCTIONS for filling up the Columns headed "PROFESSION or OCCUPATION."

GENERAL INSTRUCTIONS.

1. The precise nature of the occupation must be inserted in Column 6, in accordance with the Special Instructions given below.
 2. A person following several distinct occupations must state each of them in the order of their importance.
 3. Persons who have retired from their profession, business, or occupation must state their former calling, with the addition of the word "Retired"—as "Retired Farmer," "Retired Grocer," "Retired Blacksmith."
 4. The occupations of women and children, if any, are to be stated as well as those of men.
 5. A cross must be made in Column 7, headed "Employer," when the person is a master, employing under him workers in his trade or industry; in Column 8, headed "Employed," when the person is working in a trade or industry under a master; and in Column 9, headed "Neither Employer nor Employed," when the person neither employs other workmen in his trade or industry, nor works for a master, but works on his own account. Married women assisting their husbands in their trade or industry are to be returned as "Employed."
- These three columns, 7, 8, and 9, refer only to employment in trades and industries, and not to the employment of domestic servants.

SPECIAL INSTRUCTIONS.

1. MAGISTRATES, MEMBERS OF PARLIAMENT, and OFFICIALS may state their official title, but must also state their profession or occupation, if they have any.
2. Persons serving in the ARMY, the NAVY, or the CIVIL SERVICE should state their grade and the branch of the service to which they belong.
3. CLERGYMEN of the Church of England should return themselves as *Clerk in Holy Orders* or as *Rector*, *Vicar*, *Curate* of _____; and should not use the indefinite term *Clerk* without further specification. PRIESTS and MINISTERS of other religious communities must state to what community they belong—as, "*Roman Catholic Priest*," "*Wesleyan Minister*." Local or occasional preachers must return their ordinary occupation, but may also add the fact of their being preachers.
4. Members of the LEGAL PROFESSION should return themselves as BARRISTERS or SOLICITORS, as the case may be. LAW CLERKS should return themselves as *Barrister's Clerk* or *Solicitor's Clerk*. Articled Clerks in Solicitors' Offices should be so described.
5. Members of the various branches of the MEDICAL PROFESSION should state whether they are duly registered Practitioners, and whether they practise as PHYSICIAN, SURGEON, GENERAL PRACTITIONER, DENTIST, &c.
6. PROFESSORS, TEACHERS, &c., should state the branch of Science or Art or Knowledge which they follow. ARTISTS also should state the art which they cultivate.
7. STUDENTS of Theology, Law, Medicine, or other branches of Knowledge should return themselves as such.
8. MERCHANTS, BROKERS, AGENTS, &c., must state the particular Branch of Commerce in which they are engaged—as, "*East India Merchant*," "*Stockbroker*," "*Cotton-broker*."
9. SONS or other RELATIVES OF FARMERS employed on the farm should be returned as "*Farmer's Son*," "*Farmer's Brother*," &c.
10. AGRICULTURAL LABORERS, SHEPHERDS, and others employed on Farms must return themselves as such. The term "Laborer" must not be used by itself to describe an "Agricultural Laborer." Men employed on Farms and living in the Farmer's house may return themselves as FARM SERVANTS, but this term should not be used for domestic servants in a farm house.
11. SHOPMEN and SHOPWOMEN should state in what branch of business they are employed—as, "*Draper's Assistant*," "*Milliner's Shopwoman*."
12. Such terms as MANAGER, FOREMAN, SUPERINTENDENT should never be used without stating the special branch of trade in which the person is employed.
13. DOMESTIC SERVANTS should state the nature of their service, adding in all cases "Domestic Servant." Examples: "*Coachman—Domestic Servant*;" "*Gardener—Domestic Servant*;" "*Cook—Domestic Servant*."
14. The vague term "Engineer," which might equally designate a civil engineer or an engine-driver, or an engine-maker, is never to be used alone. CIVIL and MINING ENGINEERS should describe themselves as such. ENGINE and MACHINE MAKERS should specify the precise branch of the trade in which they are employed—as, "*Steam-engine Maker—Fitter*." ENGINE DRIVERS, STOKERS, FIREMEN should state whether they drive or stoke Railway Engines, Ship's Engines, or Stationary Engines, or whether they are Furnace Stokers—as, "*Stoker on Steamship*," "*Railway Engine-driver*," "*Gas Stoker*," "*Furnace Stoker at Potteries*."
15. ARTISANS, MECHANICS, and WORKERS in Manufactories generally, should state distinctly not only the general name of the industry in which they are employed, but the particular branch of the industry in which they are engaged, and also the material in which they work, if it be not implied in the name, and if such name be common to several industries:—as, "*Brass Founder*," "*Silk-throwster*," "*Watchmaker—Finisher*," "*Printer—Compositor*." Such terms as Founder, Finisher, Throwster, &c., &c., common to many industries, must not be used without more precise description.
16. WEAVERS, SPINNERS, &c., should invariably state the material in which they work—as, "*Cotton-spinner*," "*Silk Weaver*," &c.
17. MINERS should always state the kind of mine in which they work—as, "*Coal-miner*," "*Lead-miner*." The term "Miner" should never be used alone.
18. LABORERS, PORTERS should specify the nature of their employment—as, "*Railway Porter*," "*Agricultural Laborer*," "*Bricklayer's Laborer*," "*Laborer in Ship Yards*," "*General Laborer*." The term "Laborer" should never be used alone.
19. PERSONS FOLLOWING NO PROFESSION, TRADE, OR CALLING, but deriving their income from land, houses, dividends, or other private sources, should return themselves as "*Living on their own means*." Such indefinite terms as "Gentleman," "Esquire," &c., should not be used.

CENSUS OF IRELAND, 1891.

(Size of Schedule 15 by 8½ in.)

[Two Examples of the mode of filling up this Table are given on the other side.]

FORM A.

No. on Form B. _____

RETURN of the **MEMBERS** of this **FAMILY**, and their **VISITORS, BOARDERS, SERVANTS, &c.**, who slept or abode in this **House** on the Night of **SUNDAY**, the 5th of **APRIL**, 1891.

Number.	NAME AND SURNAME.		RELATION TO HEAD OF FAMILY.	RELIGIOUS PROFESSION.	EDUCATION.	AGE.		SEX.	RANK, PROFESSION, OR OCCUPATION.	MARRIAGE.	WHERE BORN.	IRISH LANGUAGE.	IF DEAF AND DUMB; DUMB ONLY; BLIND; IMBECILE OR IDIOT; OR LUNATIC.
	Christian Name.	Surname.				Years on last Birthday.	Months for Infants under One Year.						
	<p><i>No persons ABSENT on the Night of Sunday, April 5th, to be entered here; EXCEPT those (not enumerated elsewhere) who may be out at Work or Travelling, &c., during that Night, and who RETURN HOME ON MONDAY, APRIL 6TH.</i></p> <p><i>Subject to the above instruction, the Name of the Head of the Family should be written first; then the names of his Wife, Children, and other Relatives; then those of Visitors, Boarders, Servants, &c.</i></p>		<p>State whether "Head of Family," or "Wife," "Son," "Daughter," or other Relative; "Visitor," "Boarder," "Servant," &c.</p>	<p>State here the particular Religion, or Religious Denomination to which each person belongs.</p> <p>[Members of Protestant Denominations are requested not to describe themselves by the vague term "Protestant," but to enter the name of the particular Church, Denomination, or Body to which they belong.]</p>	<p>State here whether he or she can "Read and Write," can "Read" only, or "Cannot Read."</p>	Years on last Birthday.	Months for Infants under One Year.	<p>Write "M" for Males, and "F" for Females.</p> <p>[Before filling this column you are requested to read the Instructions on the other side.]</p>	<p>Whether "Married," "Widower," "Widow," or "Not Married."</p>	<p>If in Ireland, state in what County or City; if elsewhere, state the name of the Country.</p>	<p>Write the word "Irish" in this column opposite the name of each person who speaks IRISH only, and the words "Irish and ENGLISH" opposite the names of those who can speak both languages. In other cases no entry should be made in this column.</p>	<p>Write the respective infirmities opposite the name of the afflicted person.</p>	
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14													
15													

I hereby certify, as required by the Act 53 and 54 Vic., cap. 46, s. 9, that the foregoing Return is correct according to the best of my knowledge and belief.

I believe the foregoing to be a true Return.

Signature of Enumerator.

(Signature of Head of Family.)

CENSUS OF IRELAND, 1891.



FAMILY RETURN,—FORM A.

Prepared in pursuance of the Act 53 and 54 Vic., cap. 46.

(PATTERN TABLES.)

County.	
Barony.	
Parish.	
Townland.	
City.	
Parliamentary	Borough.
	Division.
Township.	
Town or Village.	
Street, &c., with No. of House.	
Name of Head of Family.	
No. on Form B. _____	

These spaces to be filled up by the ENUMERATOR.

General Instructions.

HEADS OF FAMILIES are requested to insert the particulars specified on the other side, in compliance with the Census (Ireland) Act, 1890, 53 and 54 Vic., c. 46.

If a House is Let or sub-Let to Separate Families, or to Lodgers (not Boarders), each HEAD OF A FAMILY or LODGER must make a Return for his portion of the House upon a SEPARATE FORM.

Hotel and Lodging House Keepers, and Stewards of Clubs are to give a Return of all Persons who arrive at their Establishments on Monday, the 6th of April, and who had not been Enumerated elsewhere.

This Paper will be CALLED FOR on Monday, April 6th, or as soon after as possible, between the hours of half-past eight in the forenoon and six in the afternoon by the appointed Enumerator, and it is desirable that the required particulars be written in the proper Columns by the Morning of that Day, in order that his progress may not be delayed. The Enumerator will assist such Persons as may not be able to fill the Form themselves.

No question shall be put by the Enumerator for the purpose of obtaining information other than the information required by the Forms and instructions issued under the authority of the Census Act.

The facts will be published in General Abstracts only, and strict care will be taken that the Returns are not used for the gratification of curiosity, or for any other object than that of rendering the Census as complete as possible.

The Census Act imposes a penalty on any person disclosing information for any object other than the purposes of the Census.

Attention is directed to the Extracts from the Act printed on this Form; and also to the Directions at head of each Column.

THOMAS W. GRIMSHAW,
Registrar-General,
T. J. BELLINGHAM BRADY,
ROBERT E. MATHESON,
Commissioners.

Approved,
WEST RIDGEWAY.

Dublin Castle,
23rd December, 1890.

INSTRUCTIONS for Filling up the Column headed "RANK, PROFESSION, or OCCUPATION."

A person following more Distinct Occupations than one, should insert each of them in the order of their importance.

1. The Titles of **PEERS** and other **PERSONS OF RANK** to be inserted as well as any important office they may hold.
2. **MEMBERS OF PARLIAMENT, MAGISTRATES, ALDERMEN**, and other important public Officers, to state their profession or occupation, if any, after their official rank or title.
3. All persons serving in the **ARMY AND NAVY**, to state their rank and the branch of the service to which they belong. Officers to state whether on the Active or the Retired List; Pensioners from the Army and Navy to state the service to which they belong.
4. All persons in the **CIVIL SERVICE** to state their rank, and the department or branch to which they belong; those retired or superannuated to be distinguished.
5. **MINISTERS OF RELIGION**—Clergymen of every religious denomination are requested to describe themselves according to their clerical rank or position, and to state distinctly the Church to which they belong.
6. **LEGAL PROFESSION**—*Barristers* to state whether they are in actual practice. The designation *Solicitor* to be confined to those whose names are actually on the Roll. Clerks in *Solicitors' Offices* should state whether they are *Solicitor's Managing, Articled or General Clerk*. Officers of any Court to state the name of the Office, and the name of the Court.
7. Members of the **MEDICAL PROFESSION** to state whether they practise as *Physician, Surgeon, Dentist, Oculist, General Practitioner, Apothecary, Medical Assistant, &c.*, or are "not practising." They should also state the University or other Society of which they are Graduates, Fellows, or Licentiates.
8. **PROFESSORS, TEACHERS, PUBLIC WRITERS, AUTHORS, and SCIENTIFIC MEN** to state the particular branch of Science or Literature which they follow; *Artists*, the art which they cultivate. Graduates should enter their degrees in this column.
9. **STUDENTS of Theology, Law, or Medicine, and Undergraduates** of any University, to be so returned.
10. **SCHOLARS**—Children or young persons attending a School or receiving regular instruction at home to be returned as *Scholars*.
11. **FARMERS**—This term is to be applied only to the occupiers of land. Sons or Daughters employed at home or on the farm, may be returned—"Farmer's Son," "Farmer's Daughter." Persons employed on the farm and sleeping in the Farmer's house should be described as *Farm Servants*.
12. **AGRICULTURAL LABOURERS, SHEPHERDS**, and others employed on Farms, but not living in the Farmer's house, should be described as *Agricultural Labourers, Shepherds, &c.*
13. **PERSONS ENGAGED IN COMMERCE**, as Merchants, Brokers, Agents, &c., to state in all cases the particular branch of Commerce in which they are engaged, or the staple in which they chiefly deal. Examples: "Corn Merchant," "Member of ——— Stock Exchange," "Tea Agent."
14. In **TRADES, MANUFACTURES**, or other Business, Masters should, in all cases, be distinguished. Example: "Carpenter—Master."
15. **WORKERS in MANUFACTURES**, and generally in the Mechanical Arts, should distinctly state the particular BRANCH OF WORK, and the MATERIAL, if they are not implied in the names, as in *Brass-founder, Iron-moulder*. Where the trade is much sub-divided, both TRADE and BRANCH are to be returned, thus: "Watchmaker—Finisher;" "Printer—Compositor."
16. **MINERS** should state the description of Mine in which they work. Examples: "Coal Miner," "Lead Miner," "Copper Miner," &c. The term *Miner* should never be used alone.
17. **ENGINEERS**—*Civil Engineers and Mining Engineers* to be so described. Workmen employed in works or factories are to be distinctly described. Examples: "Engine Smith at Factory," "Engine Fitter at Works." Engine Drivers, Stokers, and Firemen to be described in connection with the manufactory, railway, steam vessel, &c., in which they are employed. Examples: "Railway Engine Driver," "Stoker in Linen Factory," "Engineer" alone is not to be used.
18. **ARTISANS and MECHANICS** should invariably state the particular branch of mechanical art or business in which they are employed.
19. **WEAVER**—"Silk," "Wool," "Worsted," "Cotton," &c., should always be written before this general term, so as to express distinctly the material which he weaves, thus—"Cotton Weaver."
20. **DOMESTIC SERVANTS** should be described according to the nature of their service, adding in all cases "Domestic Servant." Examples: "Coachman—Domestic Servant," "Gardener—Domestic Servant," "Cook—Domestic Servant."
21. **MESSENGERS, PORTERS, LABOURERS**, to be described according to the nature of their employment. Examples: "Railway Porter," "Bricklayer's Labourer," "Labourer in Iron Works," "General Labourer." See also Instruction No. 12. The term *Labourer* should never be used alone.
22. Persons ordinarily engaged in some industry, but **OUT OF EMPLOYMENT** at the time of the Census, should be so described: as "Bricklayer, unemployed," "Carpenter, unemployed."
23. **PERSONS FOLLOWING NO PROFESSION, TRADE, OR CALLING**, and holding no public office, but deriving their incomes chiefly from land, houses, dividends, interest of money, annuities, &c., should describe themselves accordingly. The indefinite terms *Gentleman, Esquire*, are not to be used. Persons who have RETIRED FROM BUSINESS to be entered thus: "Retired Farmer," "Retired Grocer."
24. **WOMEN AND CHILDREN**—The occupation of those who are regularly employed from home, or who follow any business at home, is to be distinctly recorded. See also Instruction No. 10.

NOTE.—For Examples of the mode of filling up this Return see Pattern Tables on another part of this Form.

Extracts from the Census (Ireland) Act, 1890, 53 & 54 Vic., cap. 46.

Sec. 5. "The better to enable such persons to take the said accounts, they are hereby authorised and empowered to ask all such questions of all persons within their respective districts, respecting themselves or the persons constituting their respective families, and of all such further particulars as shall be necessary for the purpose of taking the said accounts."

Sec. 6. "Every person refusing to allow such question to be put or to answer or wilfully giving a false answer to such questions or any of them, shall for every such refusal, or false answer, be liable to a penalty not exceeding five pounds: Provided always, that no person shall be subject to any such penalty for refusing to state his religious profession."

STANDARD SCHEDULE.

PAGE No.

House No.

Serial Number and Name.	Religion.	Sect of Religion (See Rule 3).	Caste of Hindus and Jains. Tribe or race of others (See Rule 4).	Sub-division of Caste, &c. (see Rule 5).	Male or Female.	Age.	Married, Unmarried, or Widowed.	Parent Tongue.	Birth-District, Province or Country (see Rule 10).	Occupation, or Means of Subsistence (see Rule 11).	Learning, Literate, or Illiterate.	Language, known by Literate, (see Rule 13).	If any person be Insane, Deaf Mute from Birth, Totally Blind, or a Leper, enter that Person as such below.
1	2	3	4	5	6	7	8	9	10	11	12	13	14

INDIA.

EUROPEAN Schedule (Reverse).

HOUSEHOLD SCHEDULE.

(FOR EUROPEANS AND EURASIANS.)

HOUSE No.

DISTRICT.

CHARGE.

SUB-DIVISION }
OR TOWN. }

{ CIRCLE.
{ SUPERVISOR.

VILLAGE }
OR WARD. }

{ BLOCK No.
{ ENUMERATOR.

Instructions.—The schedule on the next page is to be filled up under the Census Act by the head occupant of the house or tenement, for all Europeans and Eurasians stopping in the house or tenement on the night of the 26th February, 1891, counting also as present persons ordinarily residing in the house but absent for a few hours on duty (except with a running train) and still taking their meals from the house. The head occupant aforesaid should deliver or have delivered the schedule, duly filled up and signed, to the Enumerator who will call for it on the morning of the 27th February. Every facility and aid is requested for the Enumerator, who will probably make two visits to take the Census of the native servants and their families residing on the premises. Before filling up the schedule, the instructions on the last page of this form should be carefully read.

SPECIMEN SCHEDULE.—(See Instructions on last page).

Serial number and Name.	Religion.	Religious denomination.	Race.	Nationality.	Male or Female.	Age.	Married, Unmarried or Widowed.	Parent-tongue.	Birth-place.	Occupation or Means of Subsistence.	Learning, Literate or Illiterate.	Language known by Literate.	NOTE. Infirmities (see Instructions).
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 A. F.	Christian	Church of England	European	English ...	Male ...	38	Married ...	English	England	Surgeon, Government Service	Literate...	English	—
2 B. J.	Christian	Roman Catholic	Eurasian	Eurasian	Female	27	Widow	English	Calcutta	Government Pension	Literate...	English	—
3 D. S.	Jew	Jew	Jew	Austrian	Male ...	40	Unmarried	Polish	Austria	Broker	Literate...	English	—
4 C. T.	Christian	Armenian	Armenian	British Indian	Male ...	Infant	Unmarried	English	Bombay	(Lawyer's Clerk) ...	Illiterate	—	Blind.
5 P. N.	Christian	Methodist Episcopalian	European	American	Male ...	48	Widower ...	English	United States	Piecegoods Merchant	Literate...	English	—
6 A. M.	Christian	Presbyterian ...	European	Scotch ...	Male ...	28	Married ...	English	Scotland	Tea-planter	Literate...	English	—
7 J. K.	Christian	Wesleyan	European	English ...	Male ...	32	Married ...	English	Punjab	Engineer, Railway	Literate...	English	—
8 H. S.	Christian	Lutheran	European	Swiss	Male ...	35	Unmarried	German	Switzerland	Watchmaker	Literate...	German	—
9 M. O.	Christian	Roman Catholic	European	Irish	Female	14	Unmarried	English	Malta...	(Army Officer)	Learning	—	—
10 I. V.	Christian	Greek Church ...	European	Russian ...	Male ...	52	Married ...	Russian	Russia	Sailor	Illiterate	—	—

INSTRUCTIONS FOR FILLING UP THE SCHEDULE.

GENERAL.—Enter first the head of the family resident in the house on the night of the Census, then the rest of the members of the family, and lastly, visitors stopping in the house that night. The last column should be filled in only in case of a person afflicted with one of the four infirmities specified in the instructions below, and Column 13 only for such as are shown as "Literate" in Column 12, but in every one of the other columns an entry should be made against the name of each person, no blanks being left. General and vague terms for sect and occupation should not be used. The word "Ditto" should not be used, but each entry made in full.

Column 1.—Enter the names in order, as prescribed above.

Column 2—(Religion).—Enter the main Religion, as shown in the specimen schedule on the first page of this form.

Column 3—(Religious denomination).—Enter the sect or denomination, but do not use general terms, such as "Protestant," "Episcopalian," &c. If no sect be returned enter the word "Unsectarian."

Column 4—(Race).—Enter *European* (including Australian, Canadian, American, &c.), *Eurasian*, *Armenian*, &c.

Column 5—(Nationality).—Enter the nationality to which the person considers himself or herself to belong.

Column 6—(Sex).—Enter whether male or female.

Column 7—(Age).—Enter the age *last* birthday; and against children of less than a year old, write "Infant."

Column 8—(Civil condition).—Show whether each person, infant or grown up, is married, unmarried, or widowed. Persons who have been married but have no wife or husband living, should be shown as "widowed."

Column 9—(Parent-tongue).—Enter the language ordinarily spoken in the household of the parents.

Column 10—(Birth-place).—If born in India give the district and province; if born out of India the country, but do not enter the names of counties, towns or villages, except in the case of London, or of Calcutta or Bombay, Madras, or Rangoon.

Column 11—(Occupation, &c.).—Enter the occupation of all who do work of any sort, and the source of income of such as live on property, &c. For children of whatever age and for women who do no regular work for wages or profit, enter in *brackets* the occupations of the head of the family or other person who supports them. If a person has more than one occupation, enter the chief one only, unless one of the other occupations be landholding or cultivation, in which case both should be entered. General terms such as "Government" or "Railway Service," "Commerce," "Clerk," &c., should not be used, but the exact kind of service or dealing must be specified. Persons temporarily out of employ should be returned under their last ordinary occupation.

Column 12—(Education).—Enter as "Learning" all who are under instruction whether at home or at school or at college. Those who are *not under instruction* but are able to both read and write should be shown as "Literate;" and those of whatever age who are not under instruction, and who do not know how to read and write, or who can read but not write, or who can only sign their own name, should be entered as "Illiterate."

Column 13—(Language known).—No entry is to be made in this column except for those shown as "Literate" in column 12, in whose case English should here be specified, or the language, other than Indian vernaculars, which each person can both read and write best.

Column 14—(Infirmities).—If any person be (a) of unsound mind; (b) deaf-mute from birth, not from accident or disease; (c) totally blind; or (d) afflicted with the true or corrosive leprosy, an entry accordingly should be made in this column against that person's name.

INDIA.

Reverse of Native Schedule.

INSTRUCTIONS TO ENUMERATORS.

(For vernacular translation.)

A.—THE FIRST ROUND.—(Preliminary Record.)

1. Beginning from the of 1891 you will visit every house in your block to which a separate number has been affixed, in the order in which they are entered in the list in your book, and enter in the schedules in that book every person residing in those houses in the manner prescribed below.

2. You must use black ink, and write very clearly in the character you know best.

3. You must take a fresh page for each house. If there are more than eight persons in a house, you should continue the entries for that house on the next page, repeating at the top of that page the number of the house in question, with the word "continued" after it in brackets. You must never begin the entries for a fresh house in the middle of a page, but should leave the unused lines blank.

4. If the entry for any person in any of the columns of the schedule be the same as that for the person entered on the line above, you must repeat the entry and never write the word "ditto" or make dots.

5. If one of the houses on the list be found unoccupied, you should write the word "empty" after the number of that house on the top of the form.

6. You are to enter all persons who ordinarily live and take their meals from the house, even though any of them may be, at the time of your visit, absent for a short time at the bazaar, town, watching crops, fishing (or even for a few days at a wedding or on a pilgrimage,* provided they are to be back at the house before the 26th February). After the residents you should enter the visitors, if any, stopping in the house (but not such as are only there for a day or two, as for a wedding, &c., and will not remain there till the 26th February).* In dharmshālas, serais or temples, you should enter on this occasion only those who usually live there and not travellers, &c., stopping only a day or a night or so in the building.

7. Before beginning to make these entries you must read carefully the rules for filling up each column which are printed on the next page and also the specimen schedule on the page opposite those rules.

8. You should point out to the supervisor entries about which you are in doubt, and receive his instructions. You must have completed all the entries in your book by the of 1891.

B.—THE SECOND ROUND.—(Final Record.)

9. At nightfall on the 26th February, 1891, you will take this book as already filled in and again visit every house in your block in order.

10. You must summon the chief member of each family residing in the house, and read over to him the entries made for his family in the schedule. You will strike out the entries for persons who are not present, and fill up the form for any person now in the house who was not there when the first visit was made, such as guests, infants newly born, and others. You are to consider as present all living in or taking their meals from the house, even though any of them may be out fishing or watching in the fields or at a shop, &c., for the night.

11. You must enter the word "visitor" in column 1 after the names of all who are only in the house for a few days and do not ordinarily reside there.†

12. If there be no room left on the schedule for the fresh entries above mentioned, you must take a fresh page at the end of your book, and enter on it the house number with the word "continued" after it; as prescribed in paragraph 3 above.

13. Before you start on your round you must see that you are yourself enumerated in the house where you are stopping.

14. You must make no alteration whatever in any entry against the name of any person unless you have to strike out the entries altogether because he or she is no longer present. When you strike out a person you must draw the line completely through all the entries following that person's name and not merely through column 1.

15. You must use red ink only for entries and erasures made on the round on the 26th February.

16. Whilst going on this round you must visit every house marked "empty" in your book to see whether any person is now living there.

17. After† visiting as above all the dwelling houses, you must go to the dharmshālas, serais, encampments, and landing places, where travellers rest for the night, and enter all particulars in the schedules for the wayfarers, boatmen, pilgrims, &c., you may find there, and strike out the entries already made against persons who are not now present. You should ascertain from the village watchmen if any wandering gang, &c., has come to pitch in your block, and if there be any such you should go and enumerate it as above prescribed for other persons.

18. If any householder in your block has been given a separate schedule, you should collect it on the morning of the 27th February, and after seeing that the rules have been complied with in filling up the columns, you should stitch or pin it into your book, next to the last schedule filled up by you.

19. After your book has been inspected by the supervisor you will prepare the short abstract printed on the back of the specimen schedule in it, as directed by the supervisor, and he will not take charge of your book until he has certified it to be correct.

20. According to the Census Act every person is legally bound to furnish you with such information as is necessary for filling up the schedule: but you are forbidden to ask for any information not required for the purposes of the Census, as, for instance, the amount of any person's income. Any enumerator detected in extorting money on any pretext connected with the Census renders himself liable to punishment under the Census Act or the Penal Code.

C.—RULES FOR FILLING UP THE SCHEDULE.

Rule 1.—Column 1 (Serial number and name).—Enter first the chief resident member of the family, whether male or female, then the other members of the family and their resident servants, if any, and lastly, visitors or

temporary residents after whose name write a (V) in brackets for "visitor."* If there be any objection made to giving the name of a female, write the word "female" in this column (adding her relationship to some member of the household) and filling up the rest of the columns for her as usual.

If an infant has not yet been named, enter the word "infant." The enumerator is not to insist upon any female giving her own or her husband's name. The serial number must not be added till the final record.

Rule 2.—Column 2 (Religion).—Enter here the religion which each person returns—

As Hindu, Mussulman, Jain, Christian, Parsi, Forest tribes, who are not Hindus, Mussulmans, &c., should have the name of their tribe entered in this column, as Bhil, Gond, Gáro, &c.; low castes as Chamar, Dom, Paria, Mahar, &c., should be entered by the religion which they themselves return, and no dispute about it is to be raised.

Rule 3.—Column 3 (Sect of religion).—Enter the sect of religion followed by each person as they return it—

As Smárh, Varishnav, Walábacharya, Lingáiat, &c., for Hindus; Sunni, Shiah, &c., for Mussulmans; and for Christians enter whether Church of England, Roman Catholic, Presbyterian, Lutheran, Baptist, Methodist Episcopalian, &c. If the sect cannot be stated, enter "not returned" in this column, but do not leave it blank.

Rule 4.—Column 4 (Caste, &c.).—Enter the caste of Hindus and Jains, and the tribes of those who have not castes, and the races of Christians, Buddhists, &c.—

As Brahman, Rajput, Baniá, Kumbi for Hindus; Pathán, Moghal, &c., for Mussulmans; Eurasian or Native Christians for Christians. Do not enter vague terms, such as Hindustani, Marwari, Punjabi, &c.

Rule 5.—Column 5 (Sub-division of Caste, &c.).—If the caste has been entered in column 4, enter here the sub-division, as Kanaujia or Nagar of Brahmans, Oswal of Baniás, &c. If tribes, enter the clan; if race, enter the tribe or nationality.

Some races or castes may not return sub-divisions, and in their case the entry in column 4 should be repeated, but this column must not be left blank. Native Christians, for instance, may be returned as Portuguese, East Indian, Madras, or by their caste, if recognized; Karens as Sgau, &c.; Bhils as Tadvi, Pawada, &c.; Gonds as Raj, &c.

Rule 6.—Column 6 (Male or female).—Enter here each person as either male or female, even though you have written the word "female" in column 1 already.

Rule 7.—Column 7 (Age).—Enter the number of years each person has completed.* For infants less than one year old, enter the word "infants."

If a person cannot state his or her age exactly, the enumerator should ask the relations, or refer to some well-known event of local importance, or if the person be present, make a guess at the age from the appearance. He must never insist on seeing any female who is not voluntarily produced before him.

Rule 8.—Column 8 (Marriage, &c.).—Enter each person, whether infant, child, or grown up, as either married, unmarried, or widowed. This column must not be left blank for anyone, of whatever age.

Children who have been married should be entered as married even though they may not have begun to actually live with their wives or husbands. Persons who have been married, but have no wife or husband living, should be entered as widowed. The enumerator must accept the statement made by the person, or, in the case of children, by their relatives.

Rule 9.—Column 9 (Parent-tongue).—Enter the language which each person returns as ordinarily spoken in the household of that person's parents.

Rule 10.—Column 10 (Birth-place).—Enter the district and state in which each person was born, and if the person be not born in the province, add the name of the province to the district of birth.

If the person be born out of India, enter the country, as China, Kabul, Ceylon. The names of villages, tehsils, &c., are not to be given.

Rule 11.—Column 11 (Occupation or means of subsistence.) [Read this rule very carefully, and ask the supervisor about all cases which seem doubtful to you.]—Enter here the exact occupation or means of livelihood of all males and females who do work or live on private property, such as house-rent, pension, &c. In the case of children and women who do no work, enter the occupation of the head of their family, or of the person who supports them, adding the word "dependent," but do not leave this column unfilled for any one, even an infant. If a person have two or more occupations, enter only the chief one, except when a person owns or cultivates land in addition to another occupation, when both should be entered.

No vague terms should be used, such as "service," "Government service," "Shopkeeping," "writing," or "labour," &c.; but the exact service, the goods sold, the class of writing or labour must be stated. When a person's occupation is connected with agriculture it should be stated whether the land is cultivated in person or all let to tenants; if he be an agricultural labourer, it should be stated whether he be engaged by the month or year, or is a daily field labourer. Women who earn money by occupations independent of their husbands, such as selling firewood, cording-cakes, grass, or by rice-pounding, weaving or doing house-work for wages, should be shown under those occupations. If a person makes the articles he sells, he should be entered as "maker and seller" of them. If a person lives on alms, it should be stated whether he is a religious mendicant or an ordinary beggar. When a person is in Government, Railway, Municipal service the special service should be entered first, and the word Government or Municipal, &c., after, as clerk—Government, sweeper—Municipal, labourer—Railway.

If a person be temporarily out of employ, enter the last or ordinary occupation.

Rule 12.—Column 12 (Instruction).—Enter in this column against each person, whether grown up, child or infant, either learning, literate, or illiterate. Enter all those as learning who are under instruction, either at home or at school or college.† Enter as literate, those who are able to both read and write any language, but are not under instruction as above. Enter as illiterate those who are not under instruction, and who do not know how to both read and write, or who can read but not write, or can sign their own name but not read.

Rule 13.—Column 13 (Language known by literate).—Enter here the language which those shown as literate in column 12 can both read and write, and if a person knows how to read and write English, as well as a vernacular, enter "English" also.

This column is to be left blank for those shown in column 12 as learning or illiterate, and except when English is known, only one language should be entered, that best known.

Rule 14.—Column 14 (Infirmities).—If any person be blind of both eyes, or deaf and dumb from birth, or insane, or suffering from corrosive leprosy, enter the name of the infirmity in this column.

Do not enter those blind of one eye only, or who have become deaf and dumb after birth, or who are suffering from white leprosy only.

* In the Punjab enter the current year of age.

† For the Punjab "and who are learning to read and write, or can already do so," can be added.

* Optional with Local Governments and Administrations.

† The bracketted sentences do not apply to Bengal.

‡ In Madras and Mysore substitute the word "Before."

CENSUS OF TASMANIA, 1891.—HOUSEHOLDER'S SCHEDULE.

Number of Schedule _____

(Size of Schedule: 17 by 13 in.)

Number of Census Sub-division _____

Town, Village, or Locality _____

Street, and Name or Number of Dwelling _____

CAUTION.—Any person who shall refuse or wilfully neglect to fill up, to the best of his or her knowledge, information, or belief, this Schedule, or to sign and deliver the same, or shall refuse or wilfully neglect to answer, or shall untruly answer any inquiry made by a Collector, or shall wilfully make, sign, or deliver, or cause to be delivered, any false return or statement of any particular in this Schedule, or shall obstruct any person in the performance of any duty under "The Census Act, 1891," is liable, under the provisions of the said Act, to a penalty not exceeding Twenty Pounds.

Any person employed on the Census who shall divulge any of the contents of this Schedule is liable, under the provisions of the said Act, to a penalty not exceeding Twenty Pounds.

LIST of the Members of the Household or Family, Visitors, Servants, and Others, who slept or abode in this Dwelling on the night of SUNDAY, the Fifth day of APRIL, 1891.

NAME AND SURNAME.	SEX.	AGE. (Last Birthday).	CONDITION.	RELATION TO HEAD OF FAMILY.	PROFESSION OR OCCUPATION.		WHERE BORN.	RELIGIOUS DENOMINATION.	EDUCATION.		SICKNESS AND INFIRMITY.
					NATURE OR NAME.	GRADE, &c.			DEGREE.	RECEIVING INSTRUCTION.	
No person absent on the night of Sunday, the 5th April, to be entered.	Write "M" against Males, and "F" against Females.	The Age of Persons over One year to be given in years. If the Age be less than One year insert a cross (x).	Write:— M. for Married. W. for Widow or Widower. D. for Divorced. N.M. against all Never Married persons except young children.	State whether Wife, Son, Daughter, or other Relative, Visitor, Lodger, or Servant; and in the case of Public or Charitable Institutions, whether Officer, Prisoner, Patient, Nurse, &c.	Before filling in this Column you are requested to read the Instructions on the other side.	The occupation which each person is following and deriving support from at the time of the Census should in all cases be stated. A person engaged in more than one pursuit should state his Occupations in order of their pecuniary importance to himself.	State the Country or Colony, not Town or any other sub-division; if in Australasia state which Colony. If a British Subject born in Foreign Parts, or at Sea, add (P.) if subject by Parentage, and (N.) if by Naturalization. Add (C.) if Chinese; (H.C.T.) if Half-caste Tasmanian, Aboriginal. For Foreign Subjects (except Chinese) add (F.).	Do not use general terms that represent more than one Religious body, such as "Protestant" instead of "Church of England," &c., "Catholic" instead of "Roman Catholic," &c. If a Freethinker, or professing no Denomination or Religion, state so. Write against the names of Children, however young, the Religion in which it is intended they are to be brought up. [If any person objects to state the Religious Denomination to which he adheres, the word "Object" to be entered.]	Write:— C.R. for Cannot Read. R. for Read only. R.W. for Read and Write. Add (F.) if only able to Read or Read and Write in a Foreign Language. If a Graduate of a University, state Degree and University.	Write:— U. if at College or University. S. if at State School. P. if at Private School. H. if at Home.	If laid up or unable to follow usual occupation by reason of illness or accident, write "Sick" or "Accident," or if afflicted by any of the following infirmities write "Deaf and Dumb," "Blind," "Insane," "Idiotic," "Epileptic," "Paralytic," "Leprous," "Lost a limb or an eye," as the case may be.
1											
2											
3											
4											
5											
17											
18											

LAND, OVER ONE ACRE (IF ANY), OCCUPIED OR MANAGED BY HEAD OF FAMILY.

DWELLING-HOUSE OCCUPIED BY HEAD OF FAMILY.

HOW UTILISED.	HOW MANAGED.	HOW HELD—ACRES.				ASSESSED ANNUAL VALUE OR RENTAL EXCLUSIVE OF DWELLING HOUSE.
		Freehold.	Purchased from Government, but not wholly paid for.	Under Lease.		
				Private Property.	Crown Land.	
State whether devoted mainly to Agriculture, Pastoral pursuits, Fruit-growing, Hop-growing, Timber-getting, or Mining or other purposes.	State whether as Owner, Tenant, or Manager.	Acres.	Acres.	Acres.	Acres.	

DESCRIPTION.	NO. OF ROOMS.	ASSESSED ANNUAL VALUE OR RENTAL.	HOW OCCUPIED.
			State whether occupied as Owner, Tenant, or Manager acting for Owner or Tenant.
State whether built of Stone, Brick, Wood, or what other Materials.			

I certify that the above Return is correct to the best of my knowledge and belief. Witness my hand _____

Signature of Occupier or Person in charge, or of a Sub-enumerator.

KEY TO ABBREVIATIONS RECOMMENDED
TO BE USED IN FILLING UP SCHEDULE.

Column SEX.

For *Male*, write **M.**
,, *Female*, write **F.**

Column CONDITION.

For *Married*, write **M.**
,, *Never Married*, write **N.M.**
,, *Widower or Widow*, write **W.**
,, *Divorced*, write **D.**

Column AGE.

For *Under one year*, write **x**

Column OCCUPATION (Grade).

For *Employer*, write **E.**
,, In business on one's own account, but not employing others for salary or wages.. **O.**
,, Relative assisting Head of Family in his business, but not receiving regular salary or wages as such **A.**
,, Paid by salary or wages **W.**
,, Unemployed during the week preceding Census, *add* **U.**

Column WHERE BORN.

For British subjects born in Foreign parts or at sea—
If *subject by Parentage*, *add* **(P.)**
If *subject by Naturalization*, *add* **(N.)**
For *Chinese*, *add* **(C.)**
,, Half - caste Tasmanian, *add* **(H.C.T.)**
For Foreign Subjects (except Chinese), *add*.. **(F.)**

Column EDUCATION.

For Degrees M.A., B.A., B.Sc., &c.—
If Oxford University, *add* **O.**
,, Cambridge University, *add* **C.**
,, London University, *add* **L.**
,, Edinburgh University, *add* **E.**
,, Dublin University, *add* **D.**
and so on.
For receiving Instruction—
At University or College, write.. **U.**
,, State School, write **S.**
,, Private School, write **P.**
,, Home School, write **H.**

GENERAL INSTRUCTIONS.

This Schedule is to be filled up in accordance with the headings to the columns on the other side BY THE OCCUPIER OR PERSON IN CHARGE OF THE DWELLING with particulars respecting all the persons who slept or abode therein on the night of the fifth April, 1891, also of the Dwelling-house and Land in Occupation. If the house is occupied by different families in separate stories or apartments, each such story or apartment must be treated as a separate Dwelling, and the Occupier or person in charge of each must make a Return upon a separate Schedule. In the case of Pastoral Establishments the Proprietor, Superintendent, or Manager may fill in the Return of his complete establishment, but a separate Schedule must in such case be filled for each of the out-stations or huts in which a distinct family or person resides, in addition to that for the Home Station; and if any out-station is in a different Sub-enumerator's district from that of the Home Station, the Schedule for it is to be delivered to the Sub-enumerator of the sub-district in which such dwelling is situated.

This Paper will be called for by the Sub-enumerator on Monday, the sixth day of April, or as soon after as practicable. Prior to that date the answers should be written in the proper columns and the document duly signed by the occupier or person in charge. It is the Sub-enumerator's duty to verify the facts; and, if the form from any cause should not have been filled up, or should have been insufficiently or erroneously filled up, to record the necessary particulars, or make the necessary corrections, from inquiries which he is authorised to make for that purpose.

Instructions for filling up the Column headed "Profession or Occupation."

ARMY AND NAVY.—If on actual service, state so. If retired, state present occupation.

PERSONS IN THE SERVICE OF THE GENERAL OR LOCAL GOVERNMENT to state occupation, position, and department; and, if engaged in any other occupation, to specify its nature.

JUSTICES OF THE PEACE, ALDERMEN, TOWN COUNCILLORS, &c., and other important public officers to state their ordinary profession or occupation.

MINISTERS OF RELIGION to state Denomination. They are requested not to employ the indefinite term "*Clerk*." Local or occasional preachers to return their ordinary occupations.

MEMBERS OF THE LEGAL PROFESSION to state whether in actual practice; if not practising, to state present occupation. Persons employed in Solicitors' Offices to distinguish whether they are articulated or other clerks.

MEMBERS OF THE MEDICAL PROFESSION to state whether they are Physicians, Surgeons, or General Practitioners, and return themselves as *practising* or *not practising*; if not practising to state present occupation.

TEACHERS, AUTHORS, PUBLIC WRITERS, and ARTISTS to state the particular branch of science, literature, or art in which they are engaged. Engineers to state whether civil, mechanical, or mining, &c. Surveyors to state whether land, mining, or marine, &c.

PERSONS ENGAGED IN TRADE OR COMMERCE, as Merchants, Manufacturers, Storekeepers, Retailers, Brokers, Agents, Auctioneers, &c., to state the particular business in which they are engaged, or the principal commodity in which they deal.

CLERKS, BOOKKEEPERS, SALESMEN, SALESWOMEN, SHOPMEN, COMMERCIAL TRAVELLERS, &c., to be described according to the business with which they are connected—"Bank Clerk," "Railway Clerk," "Salesman in Soft Goods Store," "Shopman to Grocer," "Traveller to Wine Merchant," &c.

The term FARMER or MARKET-GARDENER to be applied to all persons actually in occupation of land and tilling, whether proprietors or tenants. The word "*landowner*" is too vague.

MINERS to specify the nature of the mineral on which they work, and in respect of metallic ores to add whether *lode* or *alluvial*. A Miner working for another should return himself as "*Miner*," not as a laborer.

ARTISANS and MECHANICS should always mention the particular branch of their trade; thus—"Ship Carpenter," "House Carpenter," "Shingler," "Coachsmith," "Locksmith," "Horse-shoer."

CARTERS, CARRIERS, LABORERS, SERVANTS, &c., to be described in connection with their usual employment, "*Carter in Town*," "*Bullock Driver on Station*," "*Laborer making Roads*," "*Omnibus Driver*," "*Cabman*," "*Railway Porter*," "*Telegraph Messenger*," "*Domestic Servant*."

Persons not following any Profession, Trade, or Calling, and not holding any public office, but possessed of independent means, may designate themselves "*Proprietor of Land*," "*Proprietor of Houses*," "*Capitalist*," "*Stock, Bond, or Debiture Holder*," "*Annuitant*," as the case may be. The word "*Householder*" should not be used in place of "*proprietor of houses*," nor the word "*gentleman*" or "*lady*" in place of "*no occupation*."

Wives, sons and daughters, brothers, or other relatives habitually helping on farms and stations, but not receiving regular wages or salary, may be returned as "*Wife assisting*," "*Son assisting*," "*Daughter assisting*," &c., as the case may be, adding the letter "*A*" in proper column.

WOMEN.—The occupation of Women who are employed in any but domestic duties should be distinctly recorded, but they should not be entered as engaged in the occupations of their Husbands or Fathers, &c., unless they habitually assist them. When only in the capacity of Wife, Mother, Daughter, Sister, &c., write "*Domestic Duties*."

PERSONS IN HOSPITALS, ASYLUMS, GAOLS, &c.—The position of these in the institution being given in the fifth column in accordance with the instructions at its head, their calling (if any) before they entered the institution is to be inserted in the sixth or Occupation column.

OCCUPATION.

Great care must be taken, in writing the name of an occupation which is *common* to many kinds or branches of business, to ADD THE NAME OF THE EMPLOYER'S TRADE OR BUSINESS. The following names are of this type, and require the additional information suggested within brackets:—

Assistant (to whom?)
Accountant (to whom?)
Apprentice (to whom?)
Agent (for or to whom?)
Cashier (to whom?)
Clerk (to whom?)
Carter (where or to whom?)
Engine Driver (where or to whom?)
Labourer (what kind?)
and such like.

** Every answer should be written in full. The use of dots (.) or ditto (do.) leads to numerous mistakes, and is not to be accepted by the Sub-enumerators.

(Two Examples of the mode of filling up the Schedule.)

CANADA.

(Size of Schedule 18½ by 11 in.)

CENSUS OF CANADA, 1891.

RECENSEMENT DU CANADA, 1891.

Province.....

District No.....

S. District.....

SCHEDULE No. 1.—Nominal Return of the Living. Enumerated by me on the.....day of.....1891.

PAGE.....

PAGE.....

TABLEAU No. 1.—Dénombrement des Vivants. Enuméré par moi ce.....jour de.....1891.

.....Enumerator.

NUMBERED IN THE ORDER OF VISITATION.					NAMES.	Sex.	Age.	Married or Widowed.	Relation to Head of Family.	Country or Province of Birth.	French Canadians.	Place of Birth of Father.	Place of Birth of Mother.	RELIGION.	Profession, Occupation, or Trade.	Employers.	Wage Earner.	Unemployed during week preceding Census.	Employer to state average number of hands employed during year.	INSTRUCTION.		INFIRMITIES.		
Vessels and Shanties.	Houses in construction.	Houses uninhabited.	Houses inhabited.	Families.																Read.	Write.	Deaf and Dumb.	Blind.	Unsound of Mind.
NUMÉROTÉS DANS L'ORDRE DES VISITES.					NOMS.	Sexe.	Age.	Mariés ou en Veuvage.	Lien de parenté avec le Chef de Famille.	Pays ou Province de Naissance.	Canadiens Français.	Lieu de Naissance du Père.	Lieu de Naissance de la Mère.	RELIGION.	Profession, Occupation, ou Métier.	Patrons.	Employés.	Sans emploi durant la semaine précédant le recensement.	Nombre de personnes employées par les patrons durant l'année.	Sachant lire.	Sachant écrire.	INFIRMITÉS.		
Bâtiments et Chantiers.	Maisons en voie de construction.	Maisons inhabitées.	Maisons habitées.	Familles.																		Sourds-muets.	Aveugles.	Atteints d'aliénation mentale.
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[N.B.—This Schedule was continued over-leaf, and on another page, and thus contained space for 100 names. A manual of instructions was supplied to each enumerator.]

DISCUSSION *on* MR. HOOKER'S PAPER.

BEFORE the discussion was opened, Mr. Hooker read the following letter which he had received from Professor ALFRED MARSHALL:—

“I am completely in accord with what you say about the Census Office on p. 355. Among the studies of the small permanent staff during the slack years, might be an investigation of foreign censuses, and their lessons: both as to administration and as to results. Also the ‘General Report’ might be divided into two parts: one to come out as soon as possible after the census, bringing to a focus the chief results of the census; and the other written more at leisure and developing the valuable, but far too short, explanations and suggestions of a more speculative character, which are now contained in it.

“I think an ‘Occupation’ heading should be retained in the General Census; though perhaps it might be tabulated under fewer heads than now, provided a thorough Census of Occupations was taken at another time.

“Partly in view of the distinct statement with which Part V of the last General Report opens, that accurate information as to occupations ‘cannot be obtained by the machinery of an ordinary census,’ I am coming to the conclusion that the right thing to aim for, is a census relating to occupations and other industrial conditions, taken in a leisurely way—under the superintendence either of the Census Office or the Labour Department, or of the two conjointly—by experienced investigators carefully trained for their work.”

Dr. G. B. LONGSTAFF said that the diverse methods of making and presenting the results of inquiries concerning population had, as shown by their eminent Honorary Fellow, Herr Körösi, of Budapesth, been a constant trouble to statisticians, and he hoped that the present paper would be a step towards creating the uniformity so earnestly desired by that gentleman. The Census of Canada was particularly instructive: there were good and bad points in the method adopted in that country. The bad point was clearly the *de jure* system, and any one who had read Mr. Johnson’s apology for that system, must have felt how much it was needed. On the other hand, that census was taken under great difficulties, and the information collected was interesting, as showing among other things that in a large colony it was possible to obtain the particulars as to religious belief which were said to be unattainable in England. It was also the only English colony in which the Hollerith electrical machine was used. He could not help thinking that the work of extracting and tabulating the results should not be done by human hands or heads at all, but by

machinery, and if the Hollerith machine worked as well as was stated, he thought that even for our simpler operations, some such arrangement would be found of use in England.

He would suggest that the present was the time for the Society to make a further recommendation to the Government with regard to future censuses, and to intimate that the Society was as convinced as ever of the necessity of taking a quinquennial census. Now, when the Census Office was only just dissolved, and when the facts were fresh in the memories of all, it would be well to urge again that an Act of Parliament should be passed making the Census a permanent institution, and founding a permanent department in charge of it. It had been a source of great disappointment that the Government had considered it necessary to create new areas for the County Councils, but now that the evil existed some effort should be made to grapple with it. The ecclesiastical areas caused great trouble, and were probably of little use: it would be a happy exchange to introduce a religious census in their place.

The question of corruption, he thought, had not arisen so much in the British Empire as in some other Anglo-Saxon communities. One cause of false returns, not alluded to in the paper, was the extraordinary love of big figures that prevailed in the Far West, not less than among the Hindoos. He had been extremely struck with the exaggerated estimates of population which were constantly to be met with in Canada. In the case of Minneapolis and St. Paul, situated on opposite sides of the same river, mere municipal rivalry had led the latter to try to show that it was as large as Minneapolis, and the results were so palpably absurd that a fresh census had to be taken, when it was found that St. Paul had exaggerated the number of its people by about 20 per cent. It was quite possible that the same failing might exist in the British colonies, but there was no reason to suppose that the figures had been exaggerated to anything like the same extent. In Canada there had been intense disappointment at the results of the census, which seemed to show that if there had been any desire to exaggerate, they had not been very successful.

Mr. C. S. LOCH said that Dr. Longstaff had dealt with the larger aspects of the question. He would touch only on one or two points, upon which he thought the census might in future supply information. Lately engaged in an inquiry respecting the assistance of epileptics, he had found that we had no statistics of their number. Could not a census help us in this matter? So in regard to cripples. Sickness again was a vague term; but in Ireland a census of the sick was made. He would ask those conversant with the subject, whether the definition of sickness adopted for the Irish census was sufficient, and whether the results were trustworthy. If so, should not a similar census be made for England and Wales? But he wished particularly to draw attention to the returns of ages. A glance at the Diagram No. I in Mr. Hooker's paper showed how the ages accumulated, by some strange process, at decennial and quinquennial intervals. There seemed to be some age-attraction in round numbers. In a

table of deaths, which was printed in a paper of Mr. King's on "Family Annuities," he found similar variations. The number of those aged 44, for instance, numbered 27; those aged 45 numbered 51; those aged 46, 37; and the ages for 49, 50, and 51 gave the figures 40, 69, 37. Neither in the census nor in the reports of the Registrar-General were the ages, as returned, set out year by year. Thus the reader could not learn what was the actual amount of error in the returns, for it was concealed in the numbers given for ages grouped in quinquennial periods. So much turned now upon the actual number of persons of a certain age—for instance, 65—in proposals for pension schemes, that the point was important. It would seem that the true number of those who were 65 was not known, and the number of those who said they were 65 was not published. He had, at workhouses and elsewhere, made many inquiries in regard to the accuracy of statements of age. He found everywhere that they were considered extremely vague and often wrong. One case he met with in which the man had three ages: his discharge age, that on his parchment; his workhouse age—to be 60 was at many workhouses a distinct advantage, as various minor privileges accrued to those who were 60 years of age or more—and his real age, the age which, as he said, was known only to himself. Judging from Mr. King's paper to which he had referred, and from the fact that new forms of conjoint life and old age insurance were now being proposed by insurance societies, and, in Mr. Chamberlain's scheme, as State undertakings, it was important through the census to obtain evidence upon several points which had hitherto been neglected. One was the number, ages, and sex of children left by each husband and widower; another, the age of the widow at the widower's death; a third, the ages of husbands, widowers, and bachelors at death, stated year by year at and after 65. To turn to another question. One effect of the introduction of the new poor law of 1834 was, it was said, a migration of labour from rural districts; this was an interesting and important point. The census gave returns of population by counties at decennial periods. The new poor law came into general operation about 1836, about the middle of one of these periods. A quinquennial census would have marked the date of the migration, if it took place, with accuracy. A decennial census marked the period too vaguely. He hoped we might yet have a quinquennial census. Mr. Hooker's paper was a sketch of different methods of census taking. One of the greatest services of accurate statistics was to suggest inconsistencies which had to be explained, and in the explanation of which causes of social differences might be discovered, and apprehended in their quantitative relations. He hoped that on a future occasion some paper might be read on intercolonial statistics, which, based on local information, might throw light on the different results obtained in different censuses. But, above all, he hoped that at an early date the Society would form a census committee, who would obtain from those interested in different departments of work statements in regard to new facts and returns, which might in their opinion be legitimately

obtainable through or in connection with the census. It was not too early to form such a committee now.

Mr. F. HENDRIKS did not feel so sanguine as the last speaker that a committee of the Society would be able to accomplish much, because such a result was opposed to previous experience. Speaking from personal knowledge as a member of committees of the Society, who had offered advice to the Government previous to the last three or four censuses, he was certain that but few of their suggestions were adopted. The reason for this was not so much the impracticability or want of value of what they had advised, but the cost of obtaining it. This resolved the question into one of £ *s. d.*; and it was not to be expected that it could be otherwise so long as the Treasury vote for the census-taking was on so restricted a scale as at present, particularly when contrasted with what some other nations are accustomed to spend on the same object. This was well illustrated by the wide difference between recommendations agreed upon and progress really attained in securing uniformity of method, when they had met and compared notes at international gatherings of the Statistical Congress and International Statistical Institute, from the time of the first of them, presided over by the late Prince Consort, down to the latest date, when they had recently met in Chicago. He would like to ask their distinguished Honorary Fellow, Herr Körösi, of Buda-Pesth, who was present at the meeting this evening, and who was more in touch with continental statisticians, whether the views so amply discussed at various meetings of the International Statistical Congress, or of the Institute, had borne much fruit; or whether he (Herr Körösi) saw any symptoms of progress in the direction of uniformity?

Mr. J. A. BAINES said that the Indian census was no doubt a large undertaking, but that it had not been an exceptionally difficult one. There were none of the physical difficulties for instance that were mentioned in the Canada report, and he had had this advantage, that in India there was a large permanent village staff available for the collection of the data. With regard to occupations, he himself held that they ought not to be included in a census inquiry. He had tried various methods and was not sure yet which was the worst, though he believed that the least untrustworthy was that of enumerating the people as workers and dependents respectively, whether they were so tabulated afterwards or not. But the only way of getting a really workable return of occupation was by making an independent inquiry extending over several months, as had been done in Germany, where they had spent much money and obtained very elaborate results, although he was not prepared to say whether the authorities were satisfied with them.

The question of a more frequent census was one which rather interested the colonies and the United States, where the immigrant population increased very rapidly, than a country dependent on internal growth like India. A quinquennial census confined to sex

and age would be most useful, and not very expensive. In many rural districts in India, a population return was prepared every year by the village accountants, and it was, on the whole, accurate as regards annual variation in numbers, but they did not deal with ages. This last return was a blot in all census results. It would be well in every census to tabulate if not all, at least a certain proportion of the returns according to annual periods, even if it were simply by sexes, exclusive of other detail. Such returns would no doubt be inaccurate, but it was easier to work on a bad original than on a return which was known to have been corrected, but regarding which it was not known what corrections had been made and on what system. Statistical inquirers wanted the ore as it came out of the mine so that they could work it up for themselves. A return of education was not perhaps so important in England as elsewhere, where instruction to a certain standard was compulsory, and he fancied that, when it was prepared, as in Ireland, some recent experiences in connection with elections there threw doubt on the accuracy of those returns. In India they enumerated those under instruction as well as those who could read and write but were not under instruction, and thirdly, the absolutely illiterate, which latter class was held to include those who could do no more than sign their name. He considered, after the experience of the last two general enumerations, that the threefold distinction was embarrassing, and that all that should be recognised was : (a) those who could read and write more than their own names, and (b) those who could not do so, a question which was easy to put and more likely to be answered correctly than that which he had adopted in 1881 and 1891.

Herr J. KÖRÖSI (of Buda-Pesth) said that as this was the first occasion on which he had had the opportunity of speaking as a member, he would wish to thank the Society for the honour they had conferred upon him in electing him an Honorary Fellow. If he added anything to the discussion, it could only be from an international point of view. Statistics of population were unfortunately only national, but we really required statistics of the whole civilized mankind, and to obtain them it was necessary that in the enumeration and the tabulation of the figures some uniformity should be introduced by all civilized Governments, the ages being more generally combined with the other data in the census. He would refer to this in the first place. In England and the colonies ages were tabulated in quinquennial or decennial periods, but nature knew of no such artificial divisions, and there was no particular charm in round numbers. As in the census schedules the age was returned not by quinquennial periods but by single years, it was not easy to give a satisfactory answer to the question why the single years should not be tabulated, that is, why this information should be corrected. In this connection he might refer to a curious experience regarding one of the most important matters connected with demography. The English life tables were accepted all over the world as being the most reliable, and in these life tables were to be found the number of the population at each

age; but the returns as to single years in the census not being considered accurate, the ages in the actuarial tables were—as he had been told—deduced by graduating from the quinquennial groups according to the distribution which is found in other countries. But he thought that the census of England was at least as reliable as that of any other country in Europe. If there were no strong argument against it, and as no further expense would be incurred, he would suggest that the number at each age should be tabulated and published. The English censuses, already so famous by the efforts of men like Dr. Farr and Dr. Ogle, would thus become still more valuable.

The classification of the occupations also differed in each country, and there was no more difficult task in census work. The difficulty did not lie so much in the individual occupation; it was pretty well known who was a shoemaker, a tailor, or a sailor, but it was not so easy to decide what was to be called an intellectual or a manual occupation, or who were to be included under industries connected with food, &c. But these general classifications did not so much interest the statistician. The higher you went in logic, from specific to generic terms, and the greater thus the abstraction, the poorer were the real contents of the terms. Thus we could represent in thought or in drawing a lion or a cat, but we could not draw a mammal, or any other genus of animals. But it was especially these genera which could not be established in the same way all over the world. We should therefore accept only a few generic classes (*i.e.*, agriculture, industry, trade, personal services), but select twenty or thirty individual specific occupations which were known everywhere: decided progress would have been made towards the unification of occupation-statistics.

Mr. Hendriks had asked a question with regard to the effect of the decisions of the International Statistical Congress on the unification of censuses. As for the last census, he could not yet answer, but he intended to make a report, and see in what degree the various Governments had fulfilled the wishes of the Congresses and the Institute. But on going further back, he stated (in his "Projet d'un Recensement du Monde") that Governments had in many instances accepted the views of the Congresses, and he considered this as an encouragement to go on further. He could not therefore agree with Mr. Hendriks in thinking that the appointment of a Census Committee by the Society would be of no practical benefit with regard to the next English census. The ideas of a single man had often led to changes of importance, and the opinions of a body like this Society could not fail to have some influence. He therefore hoped that the suggestion made that evening to appoint a Committee now would be carried out.

Mr. A. H. BAILEY agreed with Herr Körösi that it would be very desirable to ask for a return of the number at each year of age, but not because the accuracy of the results could be at all depended upon. Those who drew up life tables began by reducing the individual ages into quinquennial groups; even then the results, they were satisfied, were inaccurate; the reason being that

the rate of mortality increased regularly with every year of age. These five-year groups were therefore subjected to a mathematical process of graduation. A theory had been propounded, for which there seemed to be some foundation, that the rate of mortality increased regularly between the age of 15 and 55 at about 3 per cent. per annum, but that 55 was a climacteric period, after which there was a sudden jump, the rate of increase after that age being 8 per cent. per annum. Ages were one of the great difficulties of the census, and he desired a return of the number at each year of life, because he believed that actuaries could make a better use of such a table than of one in which the ages were grouped in quinquennial periods.

Major P. G. CRAIGIE wished to refer to two points. The first was with regard to the defective character of the census of occupations, especially in our own case which he had been looking at from his own point of view, in order to ascertain if possible the actual number of persons engaged in the cultivation of land. The latest English census figures of farmers were again, as in former years, entirely different from the total of persons who annually reported themselves as occupying land. The fact of course only showed how very largely the tillage of land was carried on in conjunction with and as subsidiary to other employments. Over 400,000 persons individually returned themselves every year as occupying land in England and Wales, but nothing like that number appeared as farmers in the occupation columns of our census. It would almost seem as if even in this country, as was indeed the case in some foreign countries, nearly half of the occupiers of land exercised another profession as well. The other point was the perennial one of the extraordinary and increasing confusion of local divisions in this country, so that it was almost impossible to combine the census information with other available statistics or to determine what the areas were, or how they were related to each other. He hoped that before another census was taken, some reform might achieve uniformity in the areas, and some method of attaching a proper value to the table of occupations, by dealing with double occupations, would have been introduced.

Mr. N. A. HUMPHREYS said that from the general tenor of the remarks it was evident that the main object in which the Society felt the strongest interest was that there should be more frequent censuses, a sentiment in which he entirely concurred. He believed it was quite possible to have a quinquennial census of a simple character (including number, sex, and age) at a comparatively small cost. A second point, of scarcely less importance, was that of continuity, and the impossibility of doing justice to a census for which opportunity and sufficient time for due preparation was not provided. His experience convinced him of the absolute necessity for a small permanent staff. The changes during the last ten years in ecclesiastical and civil parishes, in towns, and in urban sanitary districts, were to be counted by thousands, and the census

staff was required to tabulate, not only the facts as enumerated, but also to ascertain the population of each of these changed areas at the preceding census. Since county councils had been empowered to make changes in areas, such changes were being made with increasing frequency, and it was now essential to have trained officials who could keep abreast of these changes. As Dr. Longstaff had surmised, the ecclesiastical parishes had given more trouble than any others. The Local Government Board had passed several Acts between 1881 and 1890 dealing with detached portions of parishes, but they all contained a special clause providing that the changes in civil parishes should not affect ecclesiastical parishes.

He had not himself seen the Hollerith tabulator at work, but Dr. Ogle had been able to inspect an electrical machine at Vienna. He (Mr. Humphreys) thought it had been wise to wait and judge of the results obtained from these machines in the United States, Canada, and in one or two European countries before adopting them in this country. There could, however, be no doubt but that some electrical machinery would be so perfected during the current intercensal period as would make it absolutely imperative for England to adopt it. The process of tabulation by the electrical machine appeared to be theoretically perfect, but there still remained unaffected the source of error in punching the holes in the card, so that a careful system of checking was needed.

Mr. Loch and others had suggested an increase in the items of information collected. But, as regarded epilepsy and sickness, great danger would be incurred in tabulating facts of such doubtful precision; and the same remark would apply to education. From the signatures in the marriage register books, he had found it extremely difficult, in hundreds of cases, to say whether the person purporting to sign had really signed, or had only made some kind of a mark. On the question of ages, he preferred the quinquennial groups for general purposes, while fully appreciating what Mr. Bailey had said with regard to the convenience, for life-table purposes, of having the actual figures for each year, so that actuaries might adopt their own system of graduation. At the same time, the census volume did contain a table in which the graduated numbers at each year of life were given. There were many difficulties in the classification of occupations which he thought even Herr Körösi had not fully realised. In manufacturing towns where various textile industries were carried on, thousands of persons returned themselves simply as "weavers" or "spinners," with absolutely no indication of whether they were engaged in spinning wool, cotton, or linen. Lastly, with regard to statistics of houses, he would simply refer to the subject of compounding. So long as the compounding system was carried out as at present it prevented the local authorities from furnishing, with any approach to accuracy, the number of inhabited houses within any area, although this information was invaluable for checking the census returns, and for facilitating the estimation of population in intercensal periods. It was of importance that some change should be made in the compounding system, in order

to enable local authorities to give uniform returns showing the number of inhabited houses within their areas.

Dr. G. B. LONGSTAFF pointed out with reference to sickness statistics, that the prevalence of an east wind, or the contrary, might influence the returns by 20 or 30 per cent., and so render the inquiry valueless for comparative purposes.

The CHAIRMAN (Dr. R. GIFFEN) thought that Herr Körösi would require to revise his opinion as to the ease with which the numbers engaged in what he described as ordinary occupations might be given. Among such he had mentioned sailors. In the official returns there were some 200,000 so-called sailors in the United Kingdom, but if the figures were analysed it appeared that half of these were engineers, firemen, stewards and stewardesses. "Sailor" was thus a very composite term in the mercantile marine of England, and in a proper return of occupations the question would arise whether engineers employed at sea should be classified separately, or whether they should form part of the great groups of engineers; and the like questions. The question of the permanent Census office was one which, he thought, should really be taken up by the Society at an early period. There was no doubt that the last census was rendered less useful than it ought to have been in some respects because the Census Act had not been passed in sufficient time. There ought to be a proper staff permanently engaged, first of all in the preliminary work of making the necessary arrangements and then after it was completed, devoting an adequate time to bringing out all the results which ought to be studied by a permanent census staff, but which could not be adequately dealt with in a report published so soon as three years after the census was over. He was quite sure that such a method would be more economical than the present system, and he thought that it would be perfectly legitimate for the Society to press on the Government the need of a permanent Census Office.

Mr. HOOKER in reply, after thanking the audience for the kind expressions with which the paper had been received, said that he could mention another case of exaggeration, also in the United States, which had occurred through the schedules being filled up by the enumerator. This was in connection with the census of Alaska, which had been taken in the first instance by Ivan Petroff, a man who afterwards gained some notoriety by his false translation of certain Russian documents put forward in the Behring Sea Arbitration. He appeared also to have returned the population of Alaska at a number far below the reality; the figures in the final report being much above those originally given by Petroff, who had been, indeed, subsequently dismissed. Mr. Hooker fully agreed with the suggestion that a Committee of the Society should be appointed now to consider the necessary changes in the procedure adopted for taking the Census. The facts were now fresh in the memories of all those concerned, and even if the Government did take no definite action (as Mr. Hendriks had

suggested), the difficulties experienced, and the recommendations made would at least be placed on record; while it was only by continually bringing the facts before the public that the desired results would be attained.

MISCELLANEA.

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I.—*Tables of the Production of Gold and Silver in the World since the Discovery of America.*

It has been thought desirable to present, in as succinct a form as possible, statistics of the world's production of the precious metals since the discovery of America, according to the most reliable sources. From 1492 until 1890 the most reliable estimates are undoubtedly those of the late Dr. Soetbeer; and his statistics for that period, as given in his *Edelmetall-produktion*, and at intervals, in Conrad's *Jahrbücher für Nationalökonomie und Statistik*, have accordingly been thrown into two tables—the first for gold, and the second for silver. Since then, the most authoritative estimates are those of Mr. J. Leech, the Director of the United States Mint, and his figures of the world's annual production up till 1893 are given since 1877, in order that his totals may be compared with those of Soetbeer. Tables, rather more detailed, are also added, as being interesting more especially in connection with the countries concerned, of the production of precious metals during a series of years in the United Kingdom, the United States, Australasia, and South Africa.

TABLE I.—Average Annual Production of GOLD

	Austria-Hungary.	Russia.	Africa.	Mexico.	New Granada.	Brazil.
1493-1520 ...	2,000	—	3,000	—	—	—
1521- '44 ...	1,500	—	2,400	210	2,000	—
'45- '60 ...	1,000	—	2,000	160	2,000	—
'61- '80 ...	1,000	—	2,000	340	2,000	—
'81-1600 ...	1,000	—	2,000	480	2,000	—
1601- '20 ...	1,000	—	2,000	420	3,000	—
'21- '40 ...	1,000	—	2,000	400	3,000	—
'41- '60 ...	1,000	—	2,000	370	3,500	—
'61- '80 ...	1,000	—	2,000	360	4,000	—
'81-1700 ...	1,000	—	2,000	365	4,000	1,500
1701- '20 ...	1,000	—	2,000	520	5,000	2,750
'21- '40 ...	1,000	—	2,000	680	5,000	8,850
'41- '60 ...	1,000	40	1,500	820	5,000	14,600
'61- '80 ...	1,000	95	1,500	1,310	4,000	10,350
'81-1800 ...	1,280	130	1,500	1,230	4,500	5,450
1801- '10 ...	960	165	1,200	1,763	5,000	3,750
'11- '20 ...	1,000	315	1,200	1,070	3,000	1,760
'21- '30 ...	1,135	3,375	1,200	976	3,200	2,200
'31- '40 ...	1,625	7,050	1,200	864	3,300	3,000
'41- '50 ...	1,950	22,515	1,500	1,994	3,400	2,400
'51- '55 ...	1,775	24,730	1,500	2,010	3,500	2,200
'56- '60 ...	1,560	26,570	1,500	1,358	3,500	2,120
'61- '65 ...	1,690	24,084	1,500	1,749	3,500	2,400
'66- '70 ...	1,650	30,050	1,500	1,790	3,500	1,750
'71- '75 ...	1,395	33,380	3,000	2,020	3,500	1,720
				Mexico, Colombia, and Brazil.		
1876.....	*	33,600	Included in various	7,200		
'77.....	1,904	41,000		7,100		
'78.....	1,713	42,100		7,200		
'79.....	1,824	42,600		7,100		
1880.....	1,610	41,400		6,700		
			South Africa and Guinea.	Mexico.	New Granada and Guiana.	Included in various
1881.....	1,645	33,700	1,500	1,300	10,400	
'82.....	1,597	33,100	1,500	1,400	10,700	
'83.....	1,741	32,800	1,500	1,440	12,000	
'84.....	1,647	32,700	1,600	1,780	13,800	
'85.....	1,711	30,200	2,000	1,300	11,800	
'86.....	1,745	30,872	2,200	924	10,200	
'87.....	1,805	30,232	2,900	1,240	9,200	
'88.....	1,878	32,052	6,800	1,465	8,100	
'89.....	1,816	34,867	12,200	1,362	8,300	
1890.....	2,198	33,810				

Note.—The figures for 1493-1875 are taken from Soetbeer's *Edelmetall-produktion*, 1879; for 1876-80, from his *Materialen zur Erläuterung und Beurteilung der wirtschaftlichen Edelmetallverhältnisse und der Währungsfrage*, 1886; for 1881-90, from his article on *Edelmetallgewinnung und Verwendung* in the *Jahrbücher der Nationalökonomie und Statistik*, 1891.

(in Kilogrammes), as Estimated by A. SOETBEER.

Bolivia (Potosi).	Chile.	United States.	Australia.	China.	Various.	Total.	
—	—	—	—	—	800	5,800	1493-1520
—	—	—	—	—	1,050	7,160	1521- '44
1,000	2,000	—	—	—	350	8,510	'45- '60
800	400	—	—	—	300	6,840	'61- '80
1,200	400	—	—	—	300	7,380	'81-1600
1,200	350	—	—	—	550	8,520	1601- '20
1,000	350	—	—	—	550	8,300	'21- '40
1,000	350	—	—	—	550	8,770	'41- '60
1,000	350	—	—	—	550	9,260	'61- '80
1,000	350	—	—	—	550	10,765	'81-1700
600	400	—	—	—	550	12,820	1701- '20
600	400	—	—	—	550	19,080	'21- '40
600	500	—	—	—	550	24,610	'41- '60
800	1,000	—	—	—	650	20,705	'61- '80
1,000	2,000	—	—	—	700	17,790	'81-1800
1,000	3,110	—	—	—	830	17,778	1801- '10
600	2,000	—	—	—	500	11,445	'11- '20
400	1,200	110	—	—	420	14,216	'21- '30
600	1,200	850	—	—	600	20,289	'31- '40
600	1,000	17,600	—	—	1,800	54,759	'41- '50
1,000	400	88,800	67,700	—	3,900	197,515	'51- '55
1,000	300	77,100	86,700	—	4,350	206,058	'56- '60
1,000	400	66,700	77,700	—	4,400	185,123	'61- '65
1,000	400	76,000	70,400	—	3,860	191,900	'66- '70
2,000	400	59,500	59,900	—	3,860	170,675	'71- '75
Included in various		60,000	49,156	—	14,096	165,956	1876
		70,300	45,045	—	14,287	179,445	'77
		76,800	43,747	—	14,176	185,847	'78
		58,300	43,307	—	14,390	167,307	'79
		54,200	45,215	—	14,355	163,515	1880
Peru, Bolivia, and Chile.							
400	52,200	45,564	11,000	3,017	160,678	1881	
400	48,900	44,075	9,000	3,001	153,817	'82	
600	45,140	40,852	9,400	3,205	148,584	'83	
600	46,300	42,558	11,000	3,699	155,748	'84	
700	47,850	41,287	14,000	5,090	155,972	'85	
700	52,663	39,761	16,600	5,868	160,793	'86	
1,500	49,654	41,119	14,500	6,024	158,247	'87	
1,500	49,917	42,974	14,000	5,466	164,090	'88	
1,500	49,353	49,784	10,800	5,908	176,272	'89	
	49,421					1890	

* The figures for Austria-Hungary for 1876-90 are taken from the *Statistische Tabellen zur Währungsfrage der Oesterreichischungarischen Monarchie*, 1892, where they are given as Soetbeer's.

TABLE II.—Average Annual Production of SILVER

	Germany.	Austria-Hungary.	Europe (various).	Russia.	Mexico.
1493-1520	11,000	24,000	12,000	—	—
1521- '44	15,000	32,000	12,000	—	3,400
'45- '60	19,400	30,000	13,000	—	15,000
'61- '80	15,000	23,500	10,000	—	50,200
'81-1600	14,300	17,000	10,000	—	74,300
1601-1620	10,400	11,000	8,000	—	81,200
'21- '40	6,000	8,000	13,000	—	88,200
'41- '60	6,500	8,000	11,000	—	95,200
'61- '80	7,000	10,000	10,000	—	102,100
'81-1700	11,400	10,000	9,000	—	110,200
1701-1720	15,300	10,000	8,000	—	163,800
'21- '40	25,200	12,500	8,500	—	230,800
'41- '60	21,100	24,000	10,000	7,945	301,000
'61- '80	18,100	24,000	11,000	20,140	366,400
'81-1800	23,900	26,000	9,000	20,360	562,400
1801-1810	20,900	29,500	9,000	20,150	553,800
'11- '20	23,700	25,000	9,000	22,770	312,000
'21- '30	28,200	21,000	11,000	23,260	264,800
'31- '40	29,800	20,040	16,000	20,610	331,000
'41- '50	36,000	30,600	45,000	19,515	420,300
'51- '55	48,960	35,000	72,000	17,155	466,100
'56- '60	61,510	31,700	130,000	17,380	447,800
'61- '65	68,320	36,500	121,000	17,230	473,000
'66- '70	89,125	39,970	122,000	16,290	520,900
'71- '75	143,080	38,550	215,000	11,495	601,800
1876.....	139,779	47,947	} Included in various }		601,000
'77.....	147,612	47,675			634,000
'78.....	167,988	48,662			644,000
'79.....	177,507	48,196			699,000
'80.....	186,011	47,701			701,000
'81.....	186,990	48,942			721,000
'82.....	214,982	47,663			738,000
'83.....	235,062	49,335			739,000
'84.....	248,116	49,907			785,000
'85.....	309,418	52,748			771,000
'86.....	319,598	51,739			728,600
'87.....	367,633	54,097			750,000
'88.....	406,603	52,018			848,600
'89.....	403,037	52,651			1,175,000
'90.....	402,256	50,613			

Note.—The figures for each group of years are taken from the same sources as those for the production of gold.

(in Kilogrammes), as Estimated by A. SOETBEER.

Peru.	Bolivia (Potosi),	Chile.	United States.	Various.	Total.	
—	—	—	—	—	47,000	1493-1520
27,300	—	—	—	500	90,200	1521-1544
48,000	183,200	—	—	3,000	311,600	'45- '60
46,000	151,800	—	—	3,000	299,500	'61- '80
46,000	254,300	—	—	3,000	418,900	'81-1600
103,400	205,900	—	—	3,000	422,900	1601-1620
103,400	172,000	—	—	3,000	393,600	'21- '40
103,400	139,200	—	—	3,000	366,300	'41- '60
103,400	100,500	—	—	4,000	337,000	'61- '80
103,400	92,900	—	—	5,000	341,900	'81-1700
103,400	49,100	—	—	6,000	355,600	1701-1720
103,400	43,800	1,000	—	6,000	431,200	'21- '40
103,400	58,200	1,500	—	6,000	533,145	'41- '60
121,600	83,000	2,500	—	6,000	652,740	'61- '80
128,400	98,000	5,000	—	6,000	879,060	'81-1800
151,300	96,500	7,000	—	6,000	894,150	1801-1810
88,000	49,300	5,000	—	6,000	540,770	'11- '20
58,000	42,300	6,000	—	6,000	460,560	'21- '30
90,000	61,000	20,000	—	8,000	596,450	'31- '40
108,000	66,000	45,000	—	10,000	780,415	'41- '50
77,000	73,200	68,400	8,300	20,000	886,115	'51- '55
66,000	73,200	51,200	6,200	20,000	904,990	'56- '60
75,000	71,900	44,200	174,000	20,000	1,101,150	'61- '65
70,000	90,000	69,800	301,000	20,000	1,339,085	'66- '70
70,000	222,500	82,200	564,000	20,000	1,969,425	'71- '75
			933,000	252,053	2,323,779	1876
			957,300	252,025	2,388,612	'77
			1,089,376	251,338	2,551,364	'78
			981,000	251,804	2,507,507	'79
			942,987	252,299	2,479,998	'80
			1,034,700	230,068	2,586,700	'81
			1,126,100	241,355	2,733,100	'82
			1,111,600	276,703	2,775,700	'83
			1,174,200	288,077	2,910,300	'84
			1,241,600	296,234	3,036,000	'85
			1,227,000	294,263	3,021,200	'86
			1,373,000	364,870	3,324,600	'87
			1,558,100	392,979	3,673,300	'88
			1,683,000	508,312	4,237,000	'89
			1,800,000			'90

* These figures include the production from Colombia since 1881.

TABLE III.—*Annual Production of Gold and Silver (in Kilogrammes), as Estimated by the Director of the United States Mint.*

	Gold.	Silver.		Gold.	Silver.
1877	171,453	2,174,610	1886	159,741	2,902,471
'78	179,175	2,282,573	'87	159,155	2,990,398
'79	163,675	2,313,731	'88	159,809	3,385,606
			'89	185,809	3,901,809
1880	160,152	2,326,941			
'81	155,016	2,458,322			
'82	153,470	2,690,109	1890	170,248	4,144,233
'83	143,533	2,769,197	'91	181,339	4,493,100
'84	153,017	2,665,386	'92	196,814	4,730,647
'85	163,162	2,849,995	'93		

TABLE IV.—*Production of GOLD and SILVER, in Ounces, in the UNITED KINGDOM.*[From the *Mineral Statistics of the United Kingdom.*]

Year.	Gold.	Silver.	Year.	Gold.	Silver.
1861	2,784	570,474	1878	702	397,471
'62	5,299	686,123	'79	447	333,674
'63	552	634,004			
'64	2,887	641,088	1880	10	297,283
'65	1,664	724,856	'81	4	310,048
'66	743	636,688	'82	226	372,544
'67	1,520	805,394	'83	66	344,053
'68	1,012	841,328	'84	—	325,718
'69	18	831,891	'85	3	320,520
			'86	—	325,427
1870	191	784,562	'87	58	320,345
'71	—	761,490	'88	8,745	321,425
'72	—	628,920	'89	3,890	306,149
'73	—	531,077			
'74	385	509,277	1890	206	291,724
'75	579	487,358	'91	4,008	279,792
'76	293	483,422	'92	2,835	271,259
'77	143	497,375	'93		

TABLE V.—*Production of Gold and Silver in the United States since 1845 (in Dollars).*

[The estimate for 1845-73 is by R. W. Raymond, Commissioner, and since by the Director of the Mint.]

Year.	Gold.*	Silver.*	Total.
	\$	\$	\$
1845.....	1,008,327	50,000	1,058,327
'46.....	1,139,357	50,000	1,189,357
'47.....	889,085	50,000	939,085
'48.....	10,000,000	50,000	10,050,000
'49.....	40,000,000	50,000	40,050,000
1850.....	50,000,000	50,000	50,050,000
'51.....	55,000,000	50,000	55,050,000
'52.....	60,000,000	50,000	60,050,000
'53.....	65,000,000	50,000	65,050,000
'54.....	60,000,000	50,000	60,050,000
'55.....	55,000,000	50,000	55,050,000
'56.....	55,000,000	50,000	55,050,000
'57.....	55,000,000	50,000	55,050,000
'58.....	50,000,000	500,000	50,500,000
'59.....	50,000,000	100,000	50,100,000
1860.....	46,000,000	150,000	46,150,000
'61.....	43,000,000	2,000,000	45,000,000
'62.....	39,200,000	4,500,000	43,700,000
'63.....	40,000,000	8,500,000	48,500,000
'64.....	46,100,000	11,000,000	57,100,000
'65.....	53,225,000	11,250,000	64,475,000
'66.....	53,500,000	10,000,000	63,500,000
'67.....	51,725,000	13,500,000	65,225,000
'68.....	48,000,000	12,000,000	60,000,000
'69.....	49,500,000	12,000,000	61,500,000
1870.....	50,000,000	16,000,000	66,000,000
'71.....	43,500,000	23,000,000	66,500,000
'72.....	36,000,000	28,750,000	64,750,000
'73.....	36,000,000	35,750,000	71,750,000
'74.....	33,500,000	37,300,000	70,800,000
'75.....	33,400,000	31,700,000	65,100,000
'76.....	39,900,000	38,800,000	78,700,000
'77.....	46,900,000	39,800,000	86,700,000
'78.....	51,200,000	45,200,000	96,400,000
'79.....	38,900,000	40,800,000	79,700,000
1880.....	36,000,000	39,200,000	75,200,000
'81.....	34,700,000	43,000,000	77,700,000
'82.....	32,500,000	46,800,000	79,300,000
'83.....	30,000,000	46,200,000	76,200,000
'84.....	30,800,000	48,800,000	79,600,000
'85.....	31,800,000	51,600,000	83,400,000
'86.....	35,000,000	51,000,000	86,000,000
'87.....	33,000,000	53,350,000	86,350,000
'88.....	33,175,000	59,195,000	92,370,000
'89.....	32,800,000	64,646,000	97,446,000
1890.....	32,845,000	70,464,000	103,309,000
'91.....	33,175,000	75,417,000	108,592,000
'92.....	33,000,000	73,697,000	106,697,000

* Kilogram of gold = \$664.60; kilogram of silver = \$41.56.

TABLE VI.—*Estimated Production of GOLD in Australia and New Zealand from the Earliest Records (in Ounces).*

[From the Annual Reports of the Deputy Master of the London Mint for 1885 and 1893.]

Year.	New South Wales.	New Zealand.	Queensland.*	South Australia.†	Tasmania.	Victoria.	West Australia.	Total.
	oz.	oz.	oz.	oz.	oz.	oz.	oz.	oz.
1851....	144,120	—	—	—	—	212,899	—	357,019
'52....	818,751	—	—	—	—	2,286,535	—	3,105,286
'53....	548,052	—	—	—	—	2,744,098	—	3,292,150
'54....	237,910	—	—	—	—	2,218,483	—	2,456,393
'55....	171,367	—	—	—	—	2,819,288	—	2,990,655
'56....	184,600	—	—	—	—	3,053,744	—	3,238,344
'57....	175,949	10,437	—	—	—	2,830,213	—	3,016,599
'58....	286,798	13,534	—	—	—	2,596,231	—	2,896,563
'59....	329,363	7,336	—	—	—	2,348,703	—	2,685,402
1860....	384,053	4,538	—	—	—	2,224,069	—	2,612,660
'61....	465,685	194,031	—	—	—	2,035,173	—	2,694,889
'62....	640,622	410,862	—	—	—	1,730,201	—	2,781,685
'63....	466,111	628,450	—	—	—	1,694,819	—	2,789,380
'64....	340,267	480,171	—	—	—	1,622,447	—	2,442,885
'65....	320,316	574,574	—	—	—	1,611,554	—	2,506,444
'66....	290,014	735,376	—	—	348	1,546,948	—	2,572,686
'67....	271,886	686,905	—	—	1,863	1,501,446	—	2,461,600
'68....	255,662	637,474	—	—	692	1,684,918	—	2,578,746
'69....	251,491	614,281	—	—	137	1,544,756	—	2,410,665
1870....	240,858	544,880	—	—	964	1,304,304	—	2,091,006
'71....	323,609	730,029	—	—	6,005	1,368,942	—	2,428,585
'72....	425,129	445,370	—	2,494	6,969	1,331,377	—	2,211,339
'73....	361,784	505,337	—	98	4,661	1,170,397	—	2,042,277
'74....	270,823	376,388	Total to 1877 inclusive.*	8,351	4,650	1,097,643	—	1,757,855
'75....	230,883	355,322		13,742	3,010	1,068,417	—	1,671,374
'76....	167,412	322,016		9,857	11,107	963,760	—	1,474,152
'77....	124,111	371,685	2,646,916	11,811	5,777	809,653	—	1,323,037
'78....	119,665	310,486	310,247	10,745	25,249	758,040	—	1,534,432
'79....	109,650	287,464	288,556	14,250	60,155	758,947	—	1,519,022
1880....	118,600	305,248	267,136	13,245	52,595	829,121	—	1,585,945
'81....	149,627	270,561	270,945	16,975	56,693	833,378	—	1,598,179
'82....	140,469	251,204	224,893	15,668	49,122	864,610	—	1,545,966
'83....	123,806	248,374	212,783	15,938	46,577	780,253	—	1,427,731
'84....	107,199	229,946	307,804	21,454	42,339	778,618	—	1,487,360
'85....	103,736	237,371	310,941	18,327	37,317	735,218	—	1,442,910
'86....	101,416	226,668	340,998	21,115	31,014	665,396	3,000	1,389,607
'87....	110,288	203,869	425,923	37,371	41,751	617,751	—	1,436,953
'88....	87,503	201,219	481,643	16,763	39,610	625,026	50,000	1,501,764
'89....	112,948	203,211	739,103	20,833	33,050	614,839	15,493	1,739,477
1890....	127,460	193,193	610,587	24,831	20,510	588,560	34,209	1,599,350
'91....	153,335	251,996	561,641	28,700	48,769	576,399	30,311	1,651,151
'92....	156,870	237,392	605,612	38,974	43,278	654,456	59,548	1,796,130
'93....	179,288	226,811	616,940	33,820	37,687	671,126	110,890	1,876,562
Total	10,729,486	12,534,009	9,222,668	395,362	711,399	58,772,756	303,451	92,669,131

* The production of Queensland to 1877 inclusive, is given as 2,646,916 ozs., but no details are available.

† No reliable information obtainable. Amounts given show the quantity received at the Mints in Australia.

TABLE VII.—*Estimated Production of SILVER in Australia and New Zealand from the Earliest Records (in Ounces).*

[From the Annual Reports of the Deputy Master of the London Mint for 1885 and 1893.]

Year.	New South Wales.*	New Zealand.	Queens-land.	South Australia.	Tasmania.	Victoria.†	Total.
	oz.	oz.	oz.	oz.	oz.	oz.	oz.
1862....	—	—	—	—	—	—	—
'63....	—	—	—	—	—	1,098	1,098
'64....	—	—	—	—	—	5,688	5,688
'65....	—	—	—	—	—	3,379	3,379
'66....	—	—	—	—	—	2,348	2,348
'67....	—	—	—	—	—	78	78
'68....	—	—	—	—	—	5,761	5,761
'69....	753	11,063	—	—	—	—	11,816
1870....	13,868	37,123	—	—	—	—	50,991
'71....	71,311	80,272	—	—	—	—	151,583
'72....	49,544	37,064	—	—	—	8,011	94,619
'73....	66,997	36,187	—	—	—	14,347	117,531
'74....	78,027	40,566	—	—	—	11,906	130,499
'75....	52,553	29,085	—	—	—	21,842	103,480
'76....	69,179	12,683	—	—	—	26,355	108,217
'77....	31,409	33,893	—	—	—	19,717	85,019
'78....	60,563	23,018	—	—	—	22,995	106,576
'79....	83,164	20,645	—	—	—	23,728	127,537
1880....	91,419	20,005	—	—	—	23,247	134,671
'81....	57,254	18,885	—	—	—	20,957	97,096
'82....	38,618	5,694	—	—	—	20,343	64,655
'83....	77,065	16,826	—	—	—	22,121	116,012
'84....	93,660	24,914	—	—	—	27,070	145,644
'85....	794,173	16,624	—	—	—	28,951	839,748
'86....	1,015,433	12,108	—	—	—	26,422	1,053,963
'87....	177,307	20,809	—	—	—	26,321	224,437
'88....	375,063	403	—	—	—	27,331	402,797
'89....	416,895	24,105	—*	—	12,000	30,281	483,281
1890....	496,552	32,627	—*	—	—	25,966	555,145
'91....	729,590	28,023	—	10,000	202,797	30,039	1,000,449
'92....	350,661	22,053	203,680	—	177,445	35,857	789,696
'93....	531,972	63,076	?	—	—*	40,941	
Total	5,823,030	667,751	—	10,000	392,242	553,100	

* See next tables (VIIA and B).

† Extracted from gold at Melbourne mint.

Besides the quantities mentioned in the above table, a considerable amount of silver lead and silver ore is raised, and exported, being smelted in the United Kingdom. This production is especially important in New South Wales, and is given in the *Statistical Register of New South Wales* for 1892 as follows:—

TABLE VIIA.—*Silver Lead and Silver Ore, the Produce of New South Wales, Exported (in Tons, with the Value).*

	Quantity of Ore.	Value.		Quantity of Ore.	Value.
	Tons	£		Tons	£
Up to 1881....	192	5,025	1888.....	29,842	1,075,737
1882.....	12	360	'89.....	81,545	1,899,197
'83.....	106	1,625			
'84.....	4,668	123,174	1890.....	131,040	2,667,144
'85.....	2,286	107,626	'91.....	147,780	3,484,739
'86.....	4,802	294,485	'92.....	133,355	2,420,952
'87.....	12,530	541,952	'93.....	214,260	2,953,589

The figures for 1893 in the above table, as well as the following figures for Queensland and Tasmania, are from the *Reports of the Deputy Master of the London Mint* :—

TABLE VII B.—*Silver Lead and Silver Ore Raised in Queensland and Tasmania (in Tons, with the Value).*

	Quantity of Ore.	Value.		Quantity of Ore.	Value.
	Tons	£		Tons	£
Queensland, 1889	1,104	61,500	Tasmania, 1893....	15,710	188,520
„ '90	1,913	56,639			

There are, strictly speaking, no official statistics of the production of gold in South Africa; but as it is all exported to the United Kingdom as bullion, the following figures, taken from the *Trade Returns of the United Kingdom*, may be taken to represent accurately the quantity produced in British South Africa, the amounts being the quantities delivered each year in the United Kingdom.

TABLE VIII.—*Amount of Gold Bullion Imported into the United Kingdom from the British Possessions in South Africa (in Ounces).*

Year.	oz.	Year.	oz.
1871	—	1883	8,750
'72	73	'84	9,534
'73	—	'85	18,819
'74	3,521	'86	35,143
'75	23,640	'87	56,762
'76	9,021	'88	214,283
'77	16,414	'89	356,038
'78	10,326		
'79	5,498	1890	480,144
1880	6,878	'91	626,020
'81	5,248	'92	1,098,066
'82	5,137	'93	1,409,628

II.—*Census of England and Wales: Deputation to the President of the Local Government Board.*

THE following Memorial was forwarded, in March last, by the Council of the Royal Statistical Society, to the President of the Local Government Board, together with a letter asking him to receive a small deputation from the Council:—

13th March, 1894.

To the RIGHT HON. GEORGE JOHN SHAW-LEFEVRE, M.P., *President of the Local Government Board.*

SIR,

We desire on behalf of the Council of the Royal Statistical Society, to direct your attention to the recommendations contained in the Report of the Departmental Committee appointed in February, 1890, to inquire into certain questions connected with the taking of the Census (C-6071), and to express the hope that the necessary arrangements may be made for the permanent retention of a small staff of officers for census business in accordance with the unanimous recommendation of that Committee.

In dealing with this branch of the subject referred to them, the Committee stated that all the witnesses they examined on the point attached great weight "to the advantage of giving a permanent character to the principal offices engaged in controlling census operations," and it was urged that "if the attention of a small staff of officers were constantly directed to census statistics, not only could these statistics be improved, but more use could be made of them by the preparation of special reports on many subjects which they are capable of illustrating."

The Committee also referred to the fact that "if there were a permanent Census Office, such business as that of the revision of enumerators' districts could be undertaken, and a considerable sum of money thereby saved," and that if the enumeration were to be taken more frequently than hitherto, "a permanent Census Office would become practically necessary."

In the views thus expressed by the Departmental Committee the Council of the Royal Statistical Society entirely concur. In their opinion the volumes already published by the Census Department might, with great public advantage, be supplemented by the issue of special reports on specific questions of importance which require for their elucidation not only the presentation, in statistical form, of the results of the last Census, but also that those results should be brought into juxtaposition with the figures of preceding censuses, and with other data at the disposal of the various Departments of the Government.

Under existing circumstances we can scarcely hope that the necessary funds will be forthcoming for carrying out any very extensive programme under this head, but we would respectfully urge that the services of at least one officer capable of undertaking the preparation and issue of reports of the character proposed, in

addition to any other duties which might conveniently be entrusted to him, should continue to be available for census work after the end of the present financial year, when, as we understand, the census staff would, in the absence of any arrangement such as we propose, be completely disbanded.

Amongst many subjects of importance which might with advantage be dealt with in special reports, we would instance, by way of illustration, the following:—

(1.) Occupations of Women, with special reference to Age, Married Condition, and Infant Mortality.

(2.) Social Classification of Population, with special reference to the preparation of Class Statistics of Marriages, Births, Deaths, Mental Derangement, Deaf Mutism, Blindness, &c.

(3.) Comparative Analysis of Population at successive Censuses as to Married Condition and Fecundity, as judged by the numbers and ages of children residing with their parents on the Census night.

(4.) Comparative statements of British and Foreign Workers in special trades in different parts of the country.

(5.) Comparative statement of Age Distribution by districts.

In addition to the preparation of special reports, the small permanent staff proposed to be created would naturally undertake the duty (1) of preparing from the materials collected at the last Census any new returns and tables which became necessary in the inter-censal period, as, for example, when important alterations of local boundaries are sanctioned; and (2) of making any arrangements in advance of the next ensuing census which would contribute to increased economy and efficiency. Returns such as those referred to under (1) are often urgently called for by local authorities for sanitary purposes, and on the occasion of great administrative changes, such as those effected by the Local Government Act of last Session, no suitable machinery for giving them at present existing, whilst with regard to (2), we may refer to the evidence given before the Departmental Committee by Dr. Ogle, who expressed the opinion (2559) that if there were a permanent Census Office, the revision of the 37,000 enumeration districts could be undertaken, and would save a considerable sum of money under this one heading. There was no possibility, Dr. Ogle said, of making the revision of arrangements for the next Census under the present system.

We apprehend that the expense of a small permanent staff capable of performing, within reasonable limits, the duties we have described, would not be great. A staff consisting of an officer competent to prepare special reports and to supervise the work of the branch generally, and a limited number of second division clerks, abstractors, and boy clerks, might, we should suppose, be employed for 1,500*l.* per annum at the outside, or perhaps even for 1,000*l.* per annum in the aggregate, and against this must be placed the economies its work would, as we have indicated, effect in the cost of the census operations proper.

In the event, moreover, of effect being given by the Government to the recommendation of the Committee with regard to the

taking of a census limited to number, age, and sex, midway between the decennial periods—a recommendation to which the results of the censuses of 1891 lent strong additional arguments—these economies would possess a double importance.

In view of the foregoing considerations, we have no hesitation in expressing the strong feeling we entertain that the limited expenditure we propose would be much more than justified by the advantage obtained, and we would express the earnest hope that you will be willing to take the matter into your favourable consideration, and to submit for the approval of the Lords Commissioners of Her Majesty's Treasury such arrangements as may be best calculated to give effect to the recommendations of the Departmental Committee.

We have the honour to be, Sir,

Your obedient Servants,

(Signed)

LEONARD COURTNEY,
CHARLES BOOTH,
FRED^K. HENDRIKS,
NOEL A. HUMPHREYS,
G. B. LONGSTAFF,
T. H. ELLIOTT,

On behalf of the Council of the
Royal Statistical Society.

REGINALD H. HOOKER,

Assistant Secretary to the Society,

9, Adelphi Terrace, W.C.

On the 5th June, a Deputation—consisting of the President, Mr. Leonard Courtney, M.P., Sir Rawson W. Rawson, Dr. G. B. Longstaff, Mr. F. Hendriks, and Mr. John B. Martin—was received at the House of Commons by Mr. Shaw-Lefevre.

Mr. COURTNEY, in introducing the Deputation, said that they had come to press some of the recommendations formulated by the Departmental Committee appointed in February, 1890, of which he had been Chairman. The most important recommendation which they wished to urge was the maintenance of a small permanent Census Office. In alluding to the unsatisfactory results of a hurried organisation, such as is at present employed for census operations, Mr. Courtney recapitulated the arguments set forth in the memorial as to the increased accuracy of the operations, and the greater amount of information to be drawn from the facts, by the establishment of some permanent agency. He also urged that some saving in cost might fairly be expected when the next census was taken.

Mr. BOOTH also thought that the annual cost of the office suggested would to some extent diminish the vote necessary for the census when it was taken, for the work, once done, would not require to be done again. If there were no more work to be done at the end of the four years now occupied in tabulating the returns, the staff would of course have to be disbanded; but if the sugges-

tions contained in the memorial were adopted, such an office would be employed in preparing for the next census, and in extracting much further knowledge from the figures of the last. This work could not be done by private individuals, because they, rightly, could have no access to the original materials. Private individuals had of course no right to ask the public to pay for what they wanted, but this was a case of putting in a valuable form a mass of information which could be obtained in no other way. This further information could be quietly worked up in the spare time of the office, whose duty it would be to keep the current boundaries in order. The new parish councils legislation involved a great many changes in boundaries, which would all have to be dealt with prior to the next census.

Dr. LONGSTAFF drew attention to the necessity for absolute information as to the numbers of the population. With the present rapid changes which have taken place in local government, it was extremely important, before the census, to reduce the figures of previous censuses to the same unit of area. For example, if a new borough were made now, they would require to know its population in 1891 and 1881; but such information could only be given by the Registrar-General at very great inconvenience. The maintenance of a permanent department was necessary, not merely with a view to a quinquennial census; but if we had the quinquennial census, such an office would be a *sine qua non*. Dr. Longstaff then alluded to the grave errors made in estimating the population in various boroughs during the intercensal periods, and pointed out that it was on these estimates that the death-rates were based. Much use could be made of the permanent staff by eliciting valuable information from the original documents in past years for limited areas. Other work which might be done by such an office would very speedily appear; indeed the subjects to be investigated might turn out to be more numerous than the small department could undertake. They required that additional tabulations should be made, after the urgent information had been published first.

Mr. SHAW-LEFEVRE said that, as an old President of the Royal Statistical Society, he felt very great sympathy with the objects they had in view. If he could make out a sufficient case for the Treasury, he would press it with all the means at his command. He had naturally consulted the Registrar-General, who had expressed the opinion that if there should be a quinquennial census, it would be necessary to have a permanent staff, but that he had some doubts as to whether it would be necessary, if the decennial census were to be maintained. The Registrar-General estimated the cost of the proposal at 1,500*l.* per annum, and that it would not reduce the cost of taking the decennial census. He did not know whether the Registrar-General had considered sufficiently the suggestion that additional value might be obtained from the figures already at command. With regard to the quinquennial census, he thought that the changes in the local

authorities brought about by the Act of last year would render it extremely difficult to establish a census in 1896. The Registrar-General had received notice of 380 changes in local authorities, many of which would not come into effect for some time to come. There would also afterwards be others, brought about by the Local Government Board when the local authorities failed to make required changes. He did not consider the present a good opportunity to raise the question of a quinquennial census in 1896: probably the matter would be considered for the next census in 1901. The question would have to be considered quite independently of any such census. As to the main question of the effect of a permanent staff on future censuses, or the possibility of its gleaning further information from past censuses, he hoped to make out a sufficient case to the Treasury to justify its establishment, and if the case were a strong one, he would promise to press it to the best of his ability.

Mr. COURTNEY remarked that if 1896 were too early, with reference to the recent changes, to take the census, that only showed the immense amount of work in that connection, which would really fully occupy the office that they proposed to establish.

Mr. SHAW-LEFEVRE agreed, but thought that on that point it might be sufficient to postpone the permanent staff till the change was complete. On the other hand, with regard to the additional value to be obtained from past censuses, he should be glad to be supplied with further information on that head. He further said that one of the unfortunate results of the last census was the change in the enumeration of classes, so as to make it difficult to compare one census with another. He could scarcely believe, for instance, that there had been the great reduction among agricultural labourers indicated by the census returns.

Mr. COURTNEY thought that fact rather showed the necessity of a permanent office. On behalf of the Royal Statistical Society, he begged to thank Mr. Shaw-Lefevre for his extreme courtesy in meeting the deputation, and for the sympathy he had expressed.

The deputation then withdrew.

III.—*Agricultural Returns of 1893.*

[THE following is taken from the *Agricultural Produce Statistics of Great Britain* for 1893, C-7316]:—

In dealing with the aggregate results obtained by combining the available data, it must be remembered that these totals fail in some respects to indicate the characteristics of the season of 1893,

which perhaps more than any recent year has been distinguished by a striking variety of local experience. Throughout Ireland, with perhaps the exception of a section of the country in the south-east, the year has proved a productive one; while Scotland and some of the more northerly English counties similarly escaped the more serious effects of the prolonged drought which not only told disastrously on the hay harvest, but also largely reduced the yield of the cereals of the year. The higher yields of the more fortunate parts of the United Kingdom have thus to some extent counteracted the unusual losses of the central and southern counties.

Even thus qualified, however, the general figures for the United Kingdom indicate a marked deficiency in four out of the five cereal crops reported on, while the hay crop, both from permanent and temporary grass, has been reduced to an extent never before recorded in these returns. In grain crops, as compared with 1892, we have grown less barley by 14 per cent., less wheat by 16 per cent., less beans by 31 per cent., and less peas by 5 per cent. The estimated produce of wheat stands below the total for the preceding year by as much as 1,233,000 quarters. This is mainly in consequence of the smaller area under the crop; but the further loss of nearly 1,400,000 quarters of barley must be wholly ascribed to an inferior yield, as the acreage was slightly greater than in 1892. Against these losses a total increase of only 50,000 quarters of oats, on a largely increased area, is a relatively small set off.

The estimates of the total native production of wheat, barley, oats, beans, and peas in the United Kingdom as a whole, reckoned in quarters, compare as follows for each of the last three years, placing these five crops in the order of their relative magnitude:—

Crops.	1891.	1892.	1893.
	Qrs.	Qrs.	Qrs.
Oats.....	20,809,000	21,023,000	21,074,000
Barley	9,944,000	9,617,000	8,218,000
Wheat.....	9,343,000	7,597,000	6,364,000
Beans	1,337,000	882,000	608,000
Peas.....	722,000	629,000	595,000

Such a table brings out the contrast with the harvest of 1891 as well as 1892, and indicates that nearly 3,000,000 fewer quarters of wheat were grown than were produced two years ago.

These figures also strikingly emphasise the fact that with an extending area in England, and an area always largely preponderating in Scotland and Ireland, the oat crop bulks more largely than all the other four cereals collectively in any estimate of the total corn production of the United Kingdom. And it may be

added that even if, as has been sometimes estimated, no more than one-half of the oats grown come into the category of saleable produce, the value of that half at present prices exceeds the entire value of the wheat crop of the year.

The mean yields per acre of the grain crops for the United Kingdom in 1893 are shown in the returns to have been in the case of wheat 26·08 bushels; of barley, 29·30; and of beans, 19·61. These are quite the lowest figures returned in the decade for which returns exist. In the case of peas the yield of 22·61 bushels was the lowest with the exception of 1885, when only 18·78 bushels were secured, while but for a large Irish return, and a Scottish crop over average by more than 5 per cent., the oat crop of 1893 would have occupied a similar position of inferiority.

Turning to other forms of produce, the aggregate totals of potatoes, roots, and hay in the United Kingdom in the past three years may be contrasted as under, in tons:—

Crops.	1891.	1892.	1893.
	Tons	Tons	Tons
Potatoes	6,090,000	5,634,000	6,541,000
Turnips	29,742,000	31,419,000	31,110,000
Mangold	7,558,000	7,428,000	5,225,000
Hay from clover, &c.....	4,278,000	4,015,000	3,167,000
„ permanent pasture..	8,393,000	7,501,000	5,915,000

The abundant potato crop of the season is here apparent, the average yield being only once before reached, and the total out-turn estimated at 16 per cent. above the figures for 1892. In the case of turnips the produce is slightly below the previous year's crop, but above that of 1891. Mangolds, however, show a diminution of 30 per cent., and this loss is serious in view of the value of the crop in a season when fodder and feeding stuffs are scarce. But attention will be mainly attracted to the conspicuous failure of the hay crop. The average production of both kinds of hay in the United Kingdom in a normal season may be taken as roughly 13,000,000 tons, whereof about one-third is raised in Ireland. Every one of the last three successive seasons have, however, shown under average results, and the total produce for 1893 is estimated at little over 9,000,000 tons. Since practically one-half of this, or 4,483,000 tons, was the produce of Irish fields, it follows that the reduction in the area mown, and the scanty crops secured last season, have left the growers of hay on this side of St. George's Channel with not much over half of their accustomed supply of fodder. Even with the aid of the fair Irish crop the total estimate of hay of all sorts shown by the above table to have been obtained in the United Kingdom stands at a level nearly 2,500,000 tons below the crop of 1892, and 3,500,000 tons below

that of the previous year, while it falls short of an ordinary average crop by about 4,000,000 tons.

Confining attention to the statistics collected of the yield of the various crops in Great Britain alone, and disregarding the element introduced by the Irish figures, we are met by an almost unbroken series of under average yields, the production of wheat in the year 1893 standing at only 25·95 bushels per acre, the yield for barley being 28·69 bushels, for oats 35·59 bushels, for beans 19·39 bushels, for peas 22·61 bushels, for turnips 13·30 tons, for mangolds 12·84 tons, for hops 7·21 cwts., for clover-hay 18·74 cwts., and for permanent meadow hay only 12·56 cwts., or less than half a crop. Potatoes alone show an over average yield.

Perhaps the relation of these figures to the records of previous years in some of the more important crops may be most conveniently shown by such a table as the following, wherein the normal yield for Great Britain, according to the local estimates obtained in 1885 and 1886, and shown in the heading of the several columns, is represented by the figure "100," and the proportion of the estimated yield per acre of each year from 1884 to 1893 inclusive, to this ordinary average, is shown accordingly:—

Years.	Wheat.	Barley.	Oats.	Potatoes.	Hay (Clover, &c.).	Hay (Permanent Pasture).
	Estimated Ordinary Average 28·80 Bushels per Acre.	Estimated Ordinary Average 34·02 Bushels per Acre.	Estimated Ordinary Average 39·04 Bushels per Acre.	Estimated Ordinary Average 6·11 Tons per Acre.	Estimated Ordinary Average 29·34 Cwts. per Acre.	Estimated Ordinary Average 25·56 Cwts. per Acre.
1884	104	100	96	108	—	—
'85	109	103	94	95	—	—
'86	93	95	97	94	100	102
'87	111	92	89	104	93	81
'88	97	97	95	85	96	110
'89	104	93	101	101	114	114
1890	107	103	106	87	104	104
'91	109	100	99	94	97	92
'92	92	102	99	95	87	75
'93	90	84	91	108	64	49

Neither wheat nor barley, it therefore appears, has ever before shown so small a yield as in 1893 since these returns were collected, and the yield of oats only on one occasion. Potatoes have only once before been as good a crop, while hay of both kinds has,

as anticipated, shown an enormous diminution from the normal standard.

Taking some of the estimated results of the year's harvest in detail, wheat in Great Britain was grown on a surface less by a seventh than in 1892; and the mean yield per acre being also less, though only by half a bushel, than in the bad harvest of that year, the gross total out-turn was smaller than the crop of 1892 by nearly a sixth part. As already shown the yield per acre of the wheat crop in Great Britain was practically 10 per cent. short of the accepted standard. But it must be noted that the quality has been in numerous instances unusually high, and in one or two cases weights of 65 lbs. and even 67 lbs. per bushel have been reported by the collectors.

So far as the reduced total produce follows from the diminished area devoted to wheat growing, the comments offered on the acreage returns explain sufficiently the local effect of the changes thus arising. But the mean wheat yield per acre on the area still left under this cereal in 1893 covers such varied local results as to invite closer inquiry. Compared with the standard ordinary average, accepted since 1885 as a point for comparison, although the English yield taken by itself was last year more than 3 bushels per acre short on the whole, in York, Durham, Northumberland, and in Scotland an excess of 3 to 4 bushels per acre over the average was recorded. In Cambridge, Essex, Middlesex, Kent, Surrey, and Sussex, on the other hand, the yield was 8 to 9 bushels under average, and in Hampshire over $6\frac{1}{2}$ bushels short. These figures represent percentage reductions of from 24 to 30 per cent. They doubtless indicate the chief sufferers from the meteorological conditions of the year, and help to explain the large declines of 13 per cent. in yield in the first and $17\frac{1}{2}$ per cent. in the second produce divisions which are shown in Table III, while they afford a strong contrast with the over average yield of $10\frac{1}{2}$ per cent. reported from the northern and north-western counties of the fourth division.

The yields of wheat in 1893 varied indeed so greatly in certain groups of counties that it may be worth while to make a further analysis of the general results in still narrower areas by breaking up the four divisions of England shown in Table III into the eight sub-divisions referred to in the report on the Produce Returns of 1891 (the counties in each group being noted in Table I).

Here it is made clear that the greatest reduction in the yield per acre of last season's wheat crop occurred in the five south-eastern counties lying south of the Thames, forming the first part of the second division, with a decline of nearly 25 per cent. from the standard. The first section of the first or eastern division, which is usually the area of highest wheat yield, and is distinguished as the district where this cereal still retains an exceptional share of the cultivated area, comes next in order of diminished yield, with a reduction of 21 per cent.; the third largest decline being in the counties of the extreme south-west; while the whole northern division returned an over average crop, which was best in the counties nearest the Scottish border.

TABLE I.—*Estimated Produce of Wheat in each Subdivision of England in 1893.*

Divisions of England.	Estimated Total Produce, 1893.	Estimated Yield per Acre, 1893.	Ordinary Average (as Estimated in 1885).	1893.	
				Deficiency (—) or Increase (+) on Estimated Ordinary Average.	Percentage of Decrease (—) or Increase (+).
Division No. 1*—	Bushels	Bushels	Bushels	Bushels	Per cent.
Part (a)	10,783,964	24·37	30·80	— 6·43	— 20·9
„ (b)	11,506,858	30·21	31·45	— 1·24	— 4·0
Division No. 2†—					
Part (a)	5,455,301	22·69	30·20	— 7·51	— 24·9
„ (b)	5,809,038	26·10	28·76	— 2·66	— 9·2
Division No. 3‡—					
Part (a)	5,433,897	25·02	26·39	— 1·37	— 5·2
„ (b)	3,138,804	21·70	24·36	— 2·66	— 10·9
Division No. 4§—					
Part (a)	2,445,780	28·37	24·94	+ 3·43	+ 13·7
„ (b)	1,855,765	28·84	27·15	+ 1·69	+ 6·2
* Division I. Containing (a) Six Eastern and (b) Three North-Eastern Counties.	† Division II. Containing (a) Five South-Eastern and (b) Nine East Midland Counties.	‡ Division III. Containing (a) Six West Midland and (b) Four South-Western Counties.	§ Division IV. Containing (a) Four Northern and (b) Six North-Western Counties.		
(a) Cambridge Suffolk Essex Herts Beds Hunts	(a) Kent Surrey Sussex Hants Berks	(a) Shropshire Worcester Hereford Gloucester Wilts Monmouth	(a) Northumberland Durham York, N.R. „ W.R.		
(b) Norfolk Lincoln York, E.R.	(b) Notts Leicester Rutland Northampton Warwick Oxford Bucks Middlesex London	(b) Somerset Dorset Devon Cornwall	(b) Cumberland Westmorland Lancashire Cheshire Derby Stafford		

The abnormal circumstances of the year naturally induced many efforts to provide substitutes for the loss of fodder due to the failure of hay; and although the facts could not be ascertained for the purpose of these returns, there seems little room to doubt that various catch crops were resorted to with some success by the occupiers of land, and in this connection the Board, in one of their leaflets, which attained a circulation of 120,000 copies, offered a variety of suggestions for the guidance of agriculturists.

The remarkable deficiency of hay in Great Britain, with the high prices consequent thereon, brought also, as one of its immediate consequences, an increase of imports from other countries to an extent believed to have been unprecedented. Up to the end of 1893 the imports of hay reached 263,000 tons, compared with 61,000 tons in 1892; but even this large arrival bore, as will be seen, but a relatively small proportion to the loss of native produce. It is to be remarked, also, that the foreign sources of supply drawn upon for this purpose were remarkably varied.

Much of the hay received from abroad came from distant countries, for the serious effects of the prolonged drought of 1893 were not confined to this country, and apprehensions of a serious fodder famine were reported also from many parts of the European continent.

TABLE II.—*Estimated Total Produce of Wheat, Barley, and Oats, and Acreage under been grouped, as well as in Wales, in Scotland, in Great Britain, in Ireland, and in the Figures of the Two Years, and the Proportion per Cent. of such Differences.*

Crops.	Divisions, &c.	ESTIMATED TOTAL PRODUCE.					
		1893.	1892.	1893 Compared with 1892.			
				Quantities.		Proportion per Cent.	
				Above.	Below.	Above.	Below.
		Bushels	Bushels	Bushels	Bushels	Per cent.	Per cent.
WHEAT	Division No. 1*....	22,290,822	25,507,611	—	3,216,789	—	12'61
	„ 2	11,264,339	13,593,723	—	2,329,384	—	17'14
	„ 3	8,572,701	10,729,566	—	2,156,865	—	20'10
	„ 4	4,301,545	5,276,286	—	974,741	—	18'47
	England.....	46,429,407	55,107,186	—	8,677,779	—	15'75
	Wales.....	1,205,006	1,318,763	—	113,757	—	8'63
	Scotland.....	1,612,884	2,134,983	—	522,099	—	24'45
	Great Britain....	49,247,297	58,560,932	—	9,313,635	—	15'90
	Ireland†.....	1,665,550	2,214,313	—	548,763	—	24'78
	United Kingdom	50,912,847	60,775,245	—	9,862,398	—	16'23
BARLEY||	Division No. 1*....	24,355,555	29,533,357	—	5,177,802	—	17'53
	„ 2	8,838,985	11,771,385	—	2,932,400	—	24'91
	„ 3	7,957,408	10,477,824	—	2,520,416	—	24'05
	„ 4	7,880,760	7,728,437	152,323	—	1'97	—
	England.....	49,032,708	59,511,003	—	10,478,295	—	17'61
	Wales.....	2,802,971	3,350,862	—	547,891	—	16'35
	Scotland.....	7,699,698	7,622,732	76,966	—	1'01	—
	Great Britain....	59,535,377	70,484,597	—	10,949,220	—	15'53
	Ireland†.....	6,210,615	6,454,538	—	243,923	—	3'78
	United Kingdom	65,745,992	76,939,135	—	11,193,143	—	14'55
OATS	Division No. 1*....	19,328,531	20,946,416	—	1,617,885	—	7'72
	„ 2	12,960,589	17,607,542	—	4,646,953	—	26'39
	„ 3	12,174,662	14,503,466	—	2,328,804	—	6'57
	„ 4	22,700,652	20,209,071	2,491,581	—	12'33	—
	England.....	67,164,434	73,266,495	—	6,102,061	—	2'93
	Wales	7,452,468	7,976,830	—	524,362	—	16'06
	Scotland.....	38,270,477	35,051,664	3,218,813	—	9'18	—
	Great Britain....	112,887,379	116,294,989	—	3,407,610	—	8'33
	Ireland†.....	55,700,742	51,886,208	3,814,534	—	7'35	—
	United Kingdom	168,588,121	168,181,197	406,924	—	0'24	—

* See p. 388.

† The particulars for Ireland have been furnished by the Registrar-General for Ireland. The produce of the Irish crops, which is originally given in *cwt.*s., has been converted into *bushels*, at the rate of 60 *lbs.* to the bushel of wheat, 50 *lbs.* to the bushel of barley, and 39 *lbs.* to the bushel of oats.

|| Including bere.

each of these Crops, in each of the Divisions into which the Counties of England have been divided, in the United Kingdom, in the Years 1893 and 1892; showing also the Differences between

ACREAGE.						Divisions, &c.	Crops.
1893.	1892.	1893 Compared with 1892.					
		Numbers.		Proportion per Cent.			
		Above.	Below.	Above.	Below.		
Acres	Acres	Acres	Acres	Per cent.	Per cent.	Division No. 1*....	} WHEAT
823,462	961,569	—	138,107	—	14'36	„ 2 ...	
463,030	538,611	—	75,581	—	14'03	„ 3 ...	
361,843	410,455	—	48,612	—	11'84	„ 4 ...	
150,534	192,334	—	41,800	—	21'73		
1,798,869	2,102,969	—	304,100	—	14'46	England.....	
54,562	55,278	—	716	—	1'30	Wales.....	
44,093	61,591†	—	17,498	—	28'41	Scotland.....	
1,897,524	2,219,838†	—	322,314	—	14'52	Great Britain....	
54,998	75,408	—	20,410	—	27'07	Ireland‡.....	
1,952,522§	2,295,246§	—	342,724	—	14'93	United Kingdom	} BARLEY||
856,790	830,587	26,203	—	3'15	—	Division No. 1*....	
348,088	339,901	8,187	—	2'41	—	„ 2 ...	
318,119	311,686	6,433	—	2'06	—	„ 3 ...	
228,605	227,413	1,192	—	0'52	—	„ 4 ...	
1,751,602	1,709,587	42,015	—	2'46	—	England.....	
111,851	114,520	—	2,669	—	2'33	Wales.....	
211,644	212,703	—	1,059	—	0'50	Scotland.....	
2,075,097	2,036,810	38,287	—	1'88	—	Great Britain....	
168,971	175,586	—	6,615	—	3'77	Ireland‡.....	
2,244,068§	2,212,396§	31,672	—	1'43	—	United Kingdom	} OATS
495,954	439,652	56,302	—	12'81	—	Division No. 1*....	
442,119	421,372	20,747	—	4'92	—	„ 2 ...	
412,646	374,365	38,281	—	10'23	—	„ 3 ...	
563,654	530,074	33,580	—	6'33	—	„ 4 ...	
1,914,373	1,765,463	148,910	—	8'43	—	England.....	
240,865	233,399	7,466	—	3'20	—	Wales.....	
1,016,518	998,683	17,835	—	1'79	—	Scotland.....	
3,171,756	2,997,545	174,211	—	5'81	—	Great Britain....	
1,248,338	1,226,244	22,094	—	1'80	—	Ireland‡.....	
4,420,094§	4,223,789§	196,305	—	4'65	—	United Kingdom	

† Differs from the "Agricultural Returns" by 1 acre, which was returned for the county of Argyll in error.

§ The acreage given for the United Kingdom differs from that shown in the "Agricultural Returns" by the omission of the Channel Islands and the Isle of Man, which do not supply produce statistics, and in consequence of certain corrections in the Irish figures.

TABLE III.—*Estimated Average Yield per Acre of Wheat, Barley, and Oats, in each of Scotland, in Great Britain, in Ireland, and in the United Kingdom, in the Years the Proportion per Cent. of such Differences; together with a similar Comparison of*

Crops.	Divisions, &c.	1893 and 1892.					
		1893.	1892.	1893 Compared with 1892.			
				Quantities.		Proportion per Cent.	
				Above.	Below.	Above.	Below.
WHEAT	Division No. 1	Bushels 27'07	Bushels 26'53	Bushels 0'54	Bushels —	Per cent. 2'04	Per cent. —
	„ 2	24'33	25'24	—	0'91	—	3'61
	„ 3	23'69	26'14	—	2'45	—	9'37
	„ 4	28'58	27'43	1'15	—	4'19	—
	England.....	25'81	26'20	—	0'39	—	1'49
	Wales.....	22'09	23'86	—	1'77	—	7'42
	Scotland	36'58	34'66	1'92	—	5'54	—
	Great Britain	25'95	26'38	—	0'43	—	1'63
	Ireland	30'28	29'36	0'92	—	3'13	—
	United Kingdom	26'08	26'48	—	0'40	—	1'51
BARLEY*	Division No. 1	28'43	35'56	—	7'13	—	20'05
	„ 2	25'39	34'63	—	9'24	—	26'68
	„ 3	25'01	33'62	—	8'61	—	25'61
	„ 4	34'47	33'98	0'49	—	1'44	—
	England.....	27'99	34'81	—	6'82	—	19'59
	Wales.....	25'06	29'26	—	4'20	—	14'35
	Scotland	36'38	35'84	0'54	—	1'51	—
	Great Britain	28'69	34'61	—	5'92	—	17'10
	Ireland	36'76	36'76	—	—	—	—
	United Kingdom	29'30	34'78	—	5'48	—	15'76
OATS	Division No. 1	38'97	47'64	—	8'67	—	18'20
	„ 2	29'31	41'79	—	12'48	—	29'86
	„ 3	29'50	38'74	—	9'24	—	23'85
	„ 4	40'27	38'12	2'15	—	5'64	—
	England.....	35'08	41'50	—	6'42	—	15'47
	Wales.....	30'94	34'18	—	3'24	—	9'48
	Scotland	37'65	35'10	2'55	—	7'26	—
	Great Britain	35'59	38'80	—	3'21	—	8'27
	Ireland	44'62	42'31	2'31	—	5'46	—
	United Kingdom	38'14	39'82	—	1'68	—	4'22

Note.—The estimated ordinary average yield per acre was computed from return furnished by estimators in 1885.

the Divisions into which the Counties of England have been grouped, as well as in Wales, 1893 and 1892 ; showing also the Differences between the Figures of the Two Years, and the Estimated Yield per Acre in 1893 with the Estimated Ordinary Average.

1893 and Estimated Ordinary Average.						Divisions, &c.	Crops.
1893.	Estimated Ordinary Average. (See Note.)	1893 Compared with the Estimated Ordinary Average.					
		Quantities.		Proportion per Cent.			
		Above.	Below.	Above.	Below.		
Bushels	Bushels	Bushels	Bushels	Per cnt.	Per cnt.		
27'07	31'11	—	4'04	—	12'99	Division No. 1	WHEAT
24'33	29'51	—	5'18	—	17'55	„ 2	
23'69	25'56	—	1'87	—	7'32	„ 3	
28'58	25'84	2'74	—	10'60	—	„ 4	
25'81	28'94	—	3'13	—	10'82	England.....	
22'09	21'53	0'56	—	2'60	—	Wales.....	
36'58	32'85	3'73	—	11'35	—	Scotland.....	
25'95	28'80	—	2'85	—	9'90	Great Britain	
30'28	—	—	—	—	—	Ireland	
26'08	—	—	—	—	—	United Kingdom ...	
28'43	35'71	—	7'28	—	20'39	Division No. 1	BARLEY*
25'39	35'01	—	9'62	—	27'48	„ 2	
25'01	31'06	—	6'05	—	19'48	„ 3	
34'47	32'91	1'56	—	4'74	—	„ 4	
27'99	34'35	—	6'36	—	18'52	England.....	
25'06	27'78	—	2'72	—	9'79	Wales	
36'38	34'77	1'61	—	4'63	—	Scotland.....	
28'69	34'02	—	5'33	—	15'67	Great Britain	
36'76	—	—	—	—	—	Ireland	
29'30	—	—	—	—	—	United Kingdom ...	
38'97	50'27	—	11'30	—	22'48	Division No. 1	OATS
29'31	43'55	—	14'24	—	32'70	„ 2	
29'50	35'88	—	6'38	—	17'78	„ 3	
40'27	38'99	1'28	—	3'28	—	„ 4	
35'08	42'10	—	7'02	—	16'67	England.....	
30'94	32'48	—	1'54	—	4'74	Wales.....	
37'65	35'75	1'90	—	5'31	—	Scotland.....	
35'59	39'04	—	3'45	—	8'84	Great Britain	
44'62	—	—	—	—	—	Ireland	
38'14	—	—	—	—	—	United Kingdom ...	

* Including bere.

IV.—*Comparability of Trade Statistics of various Countries.*

By A. E. BATEMAN, ESQ., C.M.G.

[THE following is the Report of the Committee on the "Comparability of Trade Statistics of various Countries," drawn up by Mr. A. E. Bateman, C.M.G., the *rapporteur* of the Committee, and presented at the meeting of the International Statistical Institute at Chicago last summer¹]:—

This is the fourth occasion on which the subject of comparative statistics of international trade has engaged the attention of the International Statistical Institute, but I regret to say that we have not yet arrived at complete accord.

It will be remembered that the chief points to which the attention of your committee has been directed are the following: (1) the valuation of imports and exports; (2) the registration of the origin of imports and of the destination of exports; (3) the classification of the articles of import and export.

As to (1) there has been little difference of opinion. The system in force in the United Kingdom for many years of valuing both imports and exports according to the declarations of importers and exporters has been approved, chiefly because it is the only possible way of showing the monthly imports and exports at the values of the month to which they relate. The approval of the committee has, however, been mainly platonic, for, so far as I know, no Government has substituted the English system for their own method of periodical valuation by commissions of experts.

In approving the English system of valuation by importers' and exporters' declaration, the committee expressed their desire that some international agreement should regulate this system and the necessary check which should be exercised over it by officials' examination of the values.

As regards the basis of valuation most European countries adopt the practice of valuing imports as they lie in the port of arrival, *i.e.*, including cost of freight, and exports at their value at the port of export, *i.e.*, excluding cost of freight. The United States, however, present an exception to this practice as regards imports, which are valued according to the invoice values declared by the importers at the port of shipment, *i.e.*, excluding the cost of freight.

In my report to the Institute at their Vienna meeting, I referred at some length to an endeavour which was being made by the British Government to secure uniformity of practice in the trade statistics of the various portions of the British empire. I showed that as regards valuation of goods the practice of nearly half the British colonies was defective, in that only the value at the port whence the goods were shipped was shown for the imports.

This practice in many of the colonies was closely bound up

¹ *Vide* the last (March) number of the *Journal*, vol. lvii, pp. 168—71.

with the payment of customs duties which were mainly *ad valorem* based on the invoice values of the goods imported. An attempt is being made to correct these values for statistical purposes by an addition of, or allowance for, the cost of freight, and I would ask the committee to make this suggestion with regard to the United States imports, so as to make their statistics more comparable with those of European countries.

The United States department has lately set a good example to other compilers of trade statistics in endeavouring to secure the proper conversion into gold values of free imports from countries where the currency is depreciated.

Turning to the second point, the origin and destination of imports and exports, it may be observed that the Institute have passed somewhat contradictory resolutions. At their meeting in Paris in 1889 they recognised the serious difficulty of showing the prime origin and ultimate destination of goods, and did not even assert that this information was desirable; while at Vienna the necessity of recording these particulars as fully as possible was distinctly affirmed by resolution. The British Government in their recommendations to the colonies have adopted a middle course. While recognising that the port or place from which goods have been last carried may have been only a *depôt* for them, they admit that it is not possible, and would, even if possible, often be misleading, to record the original country where the goods were produced, but they recommend the registration of the country where the goods were purchased, and consequently from which an invoice or through bill of lading would usually be available.

In the United Kingdom trade accounts the registration of imports and exports has long been made according to the ship's voyage, with certain exceptions, as there can be more certainty in recording the port at which the goods were put on board than in tracing the first place where the goods originated or their place of ultimate consumption.

Coming now to the third point, viz., the classification of the articles of import and export, it will be remembered that the committee at our last meeting at Vienna were only partially satisfied with the classification which the British Government proposed to adopt for the abstract figures of trade in the various parts of the empire. This classification attempted to settle the vexed question of distinguishing between raw materials and manufactures by treating all half-made materials imported for further manufacture as raw materials, while similar articles, such as yarns, pig iron, &c., produced in the country were treated as *manufactures* on exportation, because they had employed industrial effort in the country.

The resolution which was adopted by the committee, while recognising the value of this distinction for industrial purposes, affirmed that it was incomplete for the purpose of international comparison, and we are therefore again called upon to consider the question.

It must be admitted to begin with that all classifications are more or less faulty and misleading. For instance, Dr. Von Mayr,

who took a very active and intelligent part in the discussion at Vienna, proposed to distinguish as goods manufactured those on which no more labour need be bestowed to fit them for consumption. Such a definition would exclude all textiles destined to be made up into clothing. Dr. Von Mayr made also a pertinent criticism on the class "articles of food and drink," viz., that many articles, such as beer and spirits and sugar, were included in this heading, though they ought to be included under manufactures. Live animals are usually included under articles of food and drink, although even in the case of an animal for food, such as an ox, there is a large proportion of the animal which is not for food at all, being eventually leather, or tallow, or bone, &c.

Notwithstanding these and many other unavoidable faults in any system, so much pressure is put upon statisticians to classify imports and exports and to attempt to distinguish materials from manufactures, that most countries now endeavour to show at least the totals of their trade under various headings.²

RUSSIA has four classes: (1) articles of food, including drink and tobacco, which form 20 per cent. of her total imports and nearly 60 per cent. of the exports; (2) raw and semi-manufactured materials, a large class, which includes about 60 per cent. of the total imports and 35 per cent. of total exports. Class (3), animals, living, is hardly entitled to be a separate class, representing less than one-half per cent. of imports, and only 2 per cent. of the exports. Class (4), manufactured articles, has 21 per cent. of the imports, but only $4\frac{1}{2}$ per cent. of the exports.

Coming to GERMANY, only three classes are shown. Class (1) consists of food and live animals, which together had 36 per cent. of the imports and 14 per cent. of the exports. Since 1880 the imports have increased and the exports decreased considerably, showing the larger dependence of Germany on foreign food supplies. Class (2), raw materials, shows 42 per cent. of the total imports and 22 per cent. of the exports. Class (3), manufactured articles, includes various debateable items, such as prepared hides and yarns, and comprises 22 per cent. of the imports and as much as $64\frac{1}{2}$ per cent. of the exports, the movements having since 1880 been the reverse of those in the food class, namely, a decrease in the percentage of the imports and an increase in the exports, showing great industrial activity.

As regards FRANCE, the classification is, like that of Germany, one of three classes, food, raw materials, and manufactures. Horses are, however, classed as raw material instead of under articles of food and live animals, as in Germany.

Class (1) has 35 per cent. of the imports and 23 per cent. of the exports. Class (2), raw materials, comprises 51 per cent. of the imports and 23 per cent. of the exports. Class (3), manufactured articles, including, as in the case of Germany, many half-made goods, has 15 per cent. of the imports and 54 per cent. of the exports.

Turning next to SWITZERLAND, there are the three classes of

² *Vide the Statistical Abstract relating to Foreign Countries.*

food, raw materials, and manufactured articles. Horses and draught animals generally are among raw materials, and raw tobacco also, while manufactured tobacco is among manufactured articles, instead of being classed among food. The imports are divided almost exactly between the three classes, the exports being in articles of food, to the amount of 12 per cent., raw materials also 12 per cent., and the remainder in manufactured articles, 76 per cent., which is a very large proportion.

Turning next to ITALY, we find four classes of articles, namely, (1) articles of food, (2) raw materials used in industry, (3) worked up materials used in industry, and (4) manufactured articles. In Class (1) the percentage of imports has increased from 20 per cent. to 24 per cent., while the exports have declined from 37 per cent. to 29 per cent.

Raw materials have increased in imports from 30 per cent. to 36 per cent., and in exports from 17 per cent. to 20 per cent., while worked up materials are slightly less in the imports, and in the exports are more, namely, $35\frac{1}{2}$ per cent. instead of $31\frac{1}{2}$ per cent. in 1881. Manufactured articles show a large decrease in the proportion under imports, viz., from 32 per cent. to 24 per cent., with an increase in the exports, which were 16 per cent. in 1890 compared with 14 per cent. in 1881.

It has not been possible to enumerate the chief articles in the various classes in Italy, so the treatment of such doubtful articles as horses, tobacco, and seeds cannot be stated.

Taking AUSTRIA next, we find three divisions: (1) articles of food (raw and unprepared), (2) raw materials, and (3) manufactured articles. It will be noticed that manufactured food and tobacco are included among manufactured articles and not among food, and that yarns are also counted as manufactures. These differences of classification will therefore affect the percentages. Raw food imports have declined from 22 per cent. of the total to $15\frac{1}{2}$ per cent., while exports have slightly increased from 21 per cent. to nearly 23 per cent. Raw materials imported are 39 per cent. instead of $30\frac{1}{2}$ per cent., and their exports 27 per cent. instead of 24 per cent. The large class of manufactured articles has slightly declined in the imports, being in 1890 nearly 46 per cent., while the exports show a larger decrease, viz., from 55 per cent. of the total exports to less than 50 per cent.

We now come to the UNITED STATES, where we find a totally distinct classification from any of the European ones, and it is further complicated by the import classes differing entirely from those used in the export accounts.

As regards imports, there are five classes, namely, (1) articles of food and live animals, (2) articles in a crude condition for use in domestic industry, (3) articles wholly or partially manufactured for use as materials, (4) manufactured articles ready for consumption, and (5) articles of voluntary use, luxuries, &c. This last class includes manufactured tobacco, beer, spirits, and wine, and, among textiles, articles of lace, embroidery, or insertion, which are all considered to bear the stamp of luxury. The distinction is, however, one of much difficulty. The proportion of Class (1),

food and live animals, to the total imports is now nearly 37 per cent., compared with $30\frac{1}{2}$ per cent. in 1883; and Class (2), crude materials, has also increased, while articles partially or wholly manufactured both for use or consumption have decreased, as also have so-called luxuries, since the passing of the McKinley Act.

As regards the exports, there are six classes, namely, (1) products of agriculture, (2) products of mines, (3) products of the forest, (4) products of the fisheries, (5) products, miscellaneous—all these categories consisting of merchandise other than manufactures—and (6) domestic manufactures. Of these, Class (1) represents nearly 79 per cent. of the total exports, and Class (6), domestic manufactures, nearly 16 per cent., leaving only 5 per cent. for the remaining four classes.

It will be remembered that bullion and specie are excluded from all these classifications that we have been considering, an omission of considerable importance as regards the United States.

Having now briefly considered the various classifications of the principal foreign countries, I will again refer to the new classification which the British Government have recommended for adoption in the various parts of the BRITISH EMPIRE. Up to the present time British India and most of the Crown colonies have adopted the proposed classification. The Dominion of Canada and the Australasian colonies have not yet come to a decision, but the former already possesses a classification somewhat akin to that of the United States.

For BRITISH INDIA a statement of the imports and exports in 1892, compiled according to the prescribed system, shows that Class (1), live animals, food and drink, and narcotics, has 11 per cent. of the imports and 40 per cent. of the exports; Class (2), raw materials, has 10 per cent. of the imports and 33 per cent. of the exports; Class (3), manufactured articles, has nearly 60 per cent. of the imports and 20 per cent. of the exports; while the remaining class, bullion and specie, a class which is omitted in the foreign classification which we have been considering, has 20 per cent. of the imports and nearly 7 per cent. of the exports.

Lastly, applying the same classification to the imports and exports of the UNITED KINGDOM in 1892, Class (1), live animals, food and drink, and narcotics, amounts to 42 per cent. of the general imports and to only 7 per cent. of the general exports; Class (2), raw materials, has $38\frac{1}{2}$ per cent. of the imports and 21 per cent. of the exports; Class (3), manufactured articles, has 12 per cent. of the imports and 63 per cent. of the exports; and the new class of coin and bullion has 7 per cent. and 9 per cent. respectively. It will be noticed that both general and special exports are given, and there are considerable differences in the percentages according as one or the other is taken, arising mainly from the large re-export trade of the United Kingdom in food and raw materials. Exports of British manufactures represent no less than 76 per cent. of British exports, the exact figure recorded in Switzerland under the same class. The new method of classing half wrought materials among raw materials, when imported, also affects the figures. In the classification which has

hitherto been used in the *Monthly Accounts of United Kingdom*, imported manufactures amounted to 65 millions sterling in 1892, while under the new system the omission of various half-manufactured articles, such as leather, yarns, &c., reduces this amount to 56½ millions.

Having now concluded my survey of the various classifications, I would point out that even in their present divergent forms they present most interesting material for examining the industrial and commercial capacities of the various countries. I have carefully abstained from commenting on the causes of the results shown by these figures as being a matter outside the scope of the committee, but it will be evident that in combination with statistics, which are every year becoming more reliable, of agricultural and industrial production in the different countries, these trade figures, under an assimilated classification and system of valuation, will add immensely to our knowledge of the resources and intercourse of the various portions of the civilised world.

V.—Statistics of the Consumption of Tea.

THE following particulars, showing the large growth in the consumption of Indian and Ceylon teas (more particularly the latter), and the decline in the British consumption of China teas, are taken from the Annual Reports of Messrs. Gow, Wilson, Stanton, and Co., Tea Brokers:—

Tea Consumption in Principal Tea Drinking Countries.

	Average Annual Consumption.	
	1880-84.	1885-89.
	Thousands of lbs.	
United Kingdom	170,734,	183,219,
United States.....	71,175,	79,173,
Russia	62,409,	70,544,
Australian Colonies ...	18,200,	21,489,
Canada	16,600,	18,849,
Holland	4,860,	5,174,
New Zealand	3,902,	4,300,
Germany.....	3,114,	3,976,
Argentine Republic ...	900,	1,200,
Cape Colony	1,129,	1,170,
France.....	1,000,	1,168,
Austria-Hungary	740,	1,072,
Tasmania	700,	873,
Denmark.....	734,	798,

Home Consumption of Tea in the United Kingdom.

Year.	[000's omitted.]				Amount per Head of Population.
	Indian.	Ceylon.	China, &c.	Total.	
	lbs.	lbs.	lbs.	lbs.	lbs.
1849	—	—	50,022,	50,022,	1'81
'54	—	—	61,953,	61,953,	2'24
'59	—	—	76,304,	76,304,	2'67
'64	2,800,	—	85,799,	88,599,	2'99
'66	4,584,	—	97,681,	102,265,	3'42
'67	6,360,	—	104,628,	110,988,	3'68
'68	7,746,	—	99,339,	106,815,	3'52
'69	10,716,	—	101,080,	111,796,	3'63
'70	13,500,	—	104,051,	117,551,	3'81
'71	13,956,	—	109,445,	123,401,	3'92
'72	16,656,	—	111,005,	127,661,	4'01
'73	20,216,	—	111,665,	131,881,	4'11
'74	18,528,	—	118,751,	137,279,	4'22
'75	23,220,	—	122,107,	145,327,	4'43
'76	25,740,	—	123,364,	149,104,	4'49
'77	27,852,	—	132,263,	151,115,	4'50
'78	36,744,	—	120,652,	157,396,	4'64
'79	34,092,	—	126,340,	160,432,	4'68
'80	43,746,	90,	114,485,	158,321,	4'57
'81	48,112,	224,	111,715,	160,051,	4'58
'82	49,992,	504,	114,462,	164,958,	4'68
'83	57,544,	1,456,	111,780,	170,780,	4'81
'84	62,201,	2,016,	110,843,	175,060,	4'91
'85	65,678,	3,217,	113,514,	182,409,	5'06
'86	68,420,	6,245,	104,226,	178,891,	4'93
'87	83,112,	9,941,	90,508,	183,561,	5'02
'88	86,210,	18,553,	80,653,	185,416,	5'03
'89	96,000,	28,500,	61,100,	185,600,	4'99
'90	101,962,	34,516,	57,530,	194,008,	5'17
'91	98,942,	51,228,	52,287,	202,457,	5'36
'92	109,528,	63,102,	34,483,	207,114,	5'43

"The following statistics show, as nearly as can be ascertained, the quantities of Indian and Ceylon tea taken in the undernoted countries during 1891, compared with their approximate *total* annual consumption:—

[000's omitted.]

	Indian.	Ceylon.	Total Annual Consumption.		Indian.	Ceylon.	Total Annual Consumption.
	lbs.	lbs.	lbs.		lbs.	lbs.	lbs.
Australian Colonies.....	4,440,	3,211,	30,000,	South Africa....	114,	111,	2,000,
Persia	2,400,	500,	—	„ America	94,	84,	—
United States....	990,	744,	80,000,	*Austria	14,	156,	1,200,
Turkey	1,104,	18,	—	Arabia	130,	—	—
Canada	680,	410,	20,000,	France	43,	65,	1,200,
*Germany	192,	604,	4,000,	Mauritius	2,	69,	—
Holland	407,	156,	5,000,	Russia	2,	66,	70,000,

* Probably most of the tea sent to Germany and Austria was for Russia.

VI.—*Notes on Economical and Statistical Works.*

Social Evolution. By Benjamin Kidd. London: Macmillan and Co., 1894.

In this book Mr. Kidd attempts the fascinating, but difficult, enterprise of interpreting the signs of the times and ascertaining the drift of affairs. The book belongs to a class, which may be expected to become common as we approach the end of the century; for such a period naturally suggests reflection—prospective and retrospective. Men are desirous to know by what road they have travelled, and what is the goal which awaits them. To these perplexing, but seductive, questions Mr. Kidd has offered a reply which is certainly ingenious, if it is inconclusive. He himself, it is true, betrays no lack of confidence in advancing his own solution, and dismissing those of other writers as inadequate or confused or contradictory. Indeed, we imagine, he would almost go so far as to say that they had never seriously addressed themselves to the real problem. That may be briefly summarised in Mr. Kidd's language. Regarding the social organism as subject to the ascertained conditions of evolution, man, he urges, like lower forms of life, can only progress by "selection and rejection." To avoid degeneration, "every successful form" of life "must, of necessity, multiply beyond the limits which the average conditions of life comfortably provide for." But man, unlike the lower forms of life, is gifted with a reason, which is ever being improved by the evolutionary process, and enables him to see that he may thus be sacrificing his own interests to those of generations yet unborn. In Mr. Kidd's words there is no "rational sanction for progress," and therefore "human evolution is not primarily intellectual." The problem, then, is to reconcile these two opposing forces—the "self-assertive reason of the individual," and the "immensely wider interests of the social organism, and behind it those of the race in general, demanding, nevertheless, the most absolute subordination of this ever-increasing self-assertiveness in the individual." Mr. Kidd discovers the solution of the problem in the functions of religion, which supplies an "ultra-rational" sanction, and enforces altruism. As a result, new classes have been continually admitted to privileges from which they had been excluded; but they are not thereby freed from, but are rather brought more fully under, competitive influences. It is this consideration which distinguishes the humanitarian tendencies of the present from socialism properly so-called. The latter aims essentially at the cessation of the struggle, and would, as its critics justly contend, result in the degeneration of the society into which it was introduced; but the former only endeavours to supplement "equal political privileges" by "equal social opportunities."

Such is Mr. Kidd's thesis, and no one will deny that it is presented with great ability. It abounds with subtle suggestions, and the argument is at once lively and sustained. The book forms a novel attempt to reconcile religion and science, and it has naturally attracted considerable attention from various quarters.

But it has not escaped—nor is it likely to escape—severe, if not destructive, criticism. Like all who attempt to explain so vast a subject as the progress of civilisation, Mr. Kidd often appears to err by omission. He emphasises some one aspect, and necessarily he minimises, if he does not neglect altogether, some other aspect. His definition of modern socialism might be cited as an illustration, and so might his definition of religion itself. If we grant his definition, the conclusions, which he draws, seem to follow by logical deduction; but an uneasy suspicion is left that these conclusions follow from the definition rather than accord with the actual facts, and Mr. Kidd provokes this feeling by the confidence with which he utters paradoxical opinions. Nor again has he, it might be urged, really solved the problem. He may have stated it with more force than other writers, although he sometimes seems unaware how far he has been anticipated; but it might be contended that he has failed to show in any precise or definite way the manner in which self-assertiveness and altruism keep one another in check. We are left to believe that the reconciliation will be effected as it has been effected, but we have scarcely any other security for this result than the comfortable persuasion that it will be accomplished in some manner or other. For these reasons, despite of the acuteness of many of Mr. Kidd's suggestions, and despite of the unquestionable ability with which he has presented his views, we doubt whether his readers will not find our experience to be their own—that first acquaintance with his book arouses reflection, that further acquaintance almost insures conviction, but that still further acquaintance suggests doubt, and in the end awakens tacit contradiction, if it does not provoke open hostility. Such an experience is, no doubt, complimentary to the literary power, if not to the argumentative ability, of an author; and to this compliment, in our opinion, Mr. Kidd is amply entitled.

Eight Hours for Work. By John Rae. London: Macmillan and Co., 1894.

This is the most powerful case for the Eight Hours Day which has, we believe, yet been presented to the public. Mr. Rae has no sympathy with the delusive hope entertained by some of its chief advocates that it will provide employment for the unemployed, and a considerable part of his book is devoted to demonstrating, on the evidence of fact, no less than that of theory, the illusory nature of this attractive fallacy. But none the less he is a confirmed believer in the virtues of the eight hours day. And here, again, his creed rests on the evidence both of *à priori* reasoning and *à posteriori* experience. The facts, which he has collected with his usual diligence—even unearthing from the forgotten or unknown the account of an English eight hours' agitation in 1833—are set forth with impartiality, whether they seem to favour or not the case which he is presenting; and we doubt whether any more exhaustive review of the available evidence is to be found in economic or statistical literature. The diminution of the hours of labour to ten, and then to nine, has been followed by results which, Mr. Rae maintains, augur well for the success of a further

diminution to eight; and there is also actual experience in the most diverse industries of such success. To what then has it been due? Mr. Rae replies to a development of the resources of personal efficiency. In this personal efficiency there is a reserve force, which the stimulus of shorter hours brings into operation. And from this consideration important conclusions follow. In the first place the sphere, within which a diminution of hours may be expected to produce such beneficial effects, receives a wide extension. Mr. Rae, with a just discrimination between valid and defective argument, admits that there are employments where it is difficult, if not impossible, to find opportunity for the exercise of this reserve force, and he is prepared to allow that there is a limit—discoverable only by experience—beyond which it is not likely to operate. But, he contends, a working day of eight hours in the majority of the staple industries has been shown by actual experience to fall within the limit. And the beneficial results do not connect themselves merely with a relief from the strain of overwork, or—important as this may be—with a substitution of a double for a single shift, but they imply a general quickening of the intelligence, which is even more operative with machinery—however automatic it may be—than where machinery is little used. A second consequence follows from Mr. Rae's insistence on the reserve power of personal efficiency. The question of foreign competition assumes a different guise. He urges very aptly that the quality, which confessedly distinguishes the English workman from his foreign competitors, is that of energy and perseverance—the very quality, which is stimulated by shorter hours—and that the competition, which avowedly presses hardest on England, is that of countries where the hours and wages of labour approximate most closely to English conditions. Long hours and little pay yield no advantage, but rather the reverse; and the American, possessing a full measure of that intelligence, which, with the development and cheapening of means of transport, becomes daily of greater importance than physical advantage or geographic situation, does not reap the benefit to the extent that we might expect because of his long hours of work. A third and final consequence remains to be noticed. So convinced is Mr. Rae of the probable, if not certain, results of an eight hours day in stimulating personal efficiency, that he does not trouble himself very much about the precise mode of its introduction. He believes that it will come—here by one method, and there by another—here by voluntary concession, here by trades union action, and here by legislation—and he reviews the advantages and drawbacks of each method. But he does not devote any great amount of space to this examination, and the larger portion of his book is occupied with the matter of which we have already endeavoured to give an account.

Natural Value. By Friedrich von Wieser. Edited with a Preface and Analysis by William Smart, M.A., LL.D. The Translation by Christian A. Malloch. London: Macmillan and Co., 1893.

The writings of the Austrian School of Economists have

recently attracted considerable attention in this country; and that attention has been largely due to the excellent translations of their works, which Dr. Smart has either himself executed, or superintended when, as in the present case, they have been executed by others. The position among those writings of the volume before us is indicated in Dr. Smart's preface. As he there states: "the theory of value, of which the Austrian economists are now the chief exponents, is the Final or Marginal Utility theory, best known to English economists through Jevons's great work, published in 1871. In the same year, and quite independently, appeared Menger's *Grundsätze*. This was followed in 1884 by Wieser's *Ursprung und Hauptgesetze des wirthschaftlichen Werthes*. The *Positive Theory of Capital*, of Böhm-Bawerk (1889), contains a masterly exposition of value, price, and costs, on which the author bases his well-known theory of interest. Previous to that, in 1887, Sax published his *Grundlegung*, in which he applied the value theory to the economic functions of the State. Finally came the present work, which at once catches up many loose ends in previous expositions, and carries the whole theory, with its applications, to a higher level of completeness." It is impossible within the limits of a short notice to furnish any adequate analysis of such a book; and it will suffice to say that the foundations and main applications of the Austrian theory of value are presented with the dialectical skill and painstaking thoroughness characteristic of the school. Nor, we may be allowed to add, is the reasoning less difficult to grasp in Professor Wieser's exposition than in that of his brother economists; and, even when interpreted through the medium of this careful translation, readers will eagerly welcome the assistance of Dr. Smart's prefatory analysis. Indeed we know of no readier means of comprehending the intricacies of the Austrian theory than Dr. Smart's little book entitled the *Austrian Theory of Value*. About the importance of the theory itself as a contribution to economics we are inclined to think that it is perhaps more useful as a severe intellectual discipline, through which English students acquainted with Jevons may derive benefit by passing, than as constituting any really new departure. We believe that the Austrian economists themselves betray a tendency to exaggerate their differences from the older English economists, and that, in their eagerness to establish a claim for novelty, they do not discern the parallel and complementary character of that theory of value, which lays stress on the element of cost of production. After reading Professor Wieser's attempt to bring that element into strict subordination to the element of final utility, we remain unconvinced of the advantage of making the attempt, and we feel tolerably certain that success can only be won by some unnatural distortion of argument and some unduly strained interpretation of language. It appears to us to be really more comprehensive to recognise the duality of the factors in operation, and the mutual interaction of supply and demand, than to seek at all costs for an artificial, if impossible, unity, and to emphasise exclusively one side at the expense of the other. We therefore scarcely think it unjust to say that expositors of the theory have been unduly

prone to exaggerate the importance and—in the case of the later writers—the originality of the Austrian school; and Dr. Smart seems to us—even in the present case—to be subject to this failing. But on the other hand there can be no question of the service rendered to students in one country by enabling them to acquaint themselves with the thoughts of eminent students in another; and in the writings of Dr. Wieser, as in those of his countrymen, it is impossible not to admire that dialectical ability, which is perhaps never shown to greater advantage than when, as in the concluding chapter of the second section of the present volume, he applies the solvent of a most destructive criticism to current socialist theories. The intelligent student cannot fail to be braced by the process, and to issue from it with convictions based upon reasoning, and not on mere prepossession.

History of the English Landed Interest: its Customs, Laws, and Agriculture. (Modern Period.) By Russell M. Garnier. London: Swan, Sonnenschein, and Co., 1893.

In a previous number of the Journal we noticed the first instalment of the work of which the volume before us forms the conclusion. We are glad that Mr. Garnier has, as he states in his preface, been encouraged by the favourable reception accorded to that part of his work, in which he dealt with the Early Period, to proceed in the present volume to the Modern Period. This embraces the eighteenth and the first half of the nineteenth century—the one, in Mr. Garnier's words, a time of "germination and growth," and the other a time of "fruition," in which the "crop that was coming to maturity" through the earlier of the two periods was "garnered" in the pages of the *Statute Book*. Mr. Garnier concludes his narrative with the repeal of the Corn Laws, although in not a few passages he makes his opinion tolerably evident on much which has happened since, and also on what seems likely to occur in the future. In fact, if his history betrays one conspicuous failing, it is a tendency to discursiveness. But his subject is so vast, and is so effectually covered, that matter, which may at first seem irrelevant, is often discovered afterwards to have a bearing on the main topic. The same qualities, which were manifest in Mr. Garnier's first volume, will be recognised in his second. The careful way, in which he has equipped himself for his undertaking, is no less conspicuous than the vigour and freshness with which he has completed its execution. We do not think that ever before so much material relating to land in its various aspects—legal, economic, political, scientific and practical—has been brought within a compass of so reasonable an extent. And Mr. Garnier takes up each fresh topic with so evident an interest, that we forget that he has already dealt with so much. With all his opinions his readers may not agree; but they will at least allow that they are founded on knowledge and on conviction, and no one, who desires information on any of the aspects we have enumerated above, will turn to Mr. Garnier's volumes without some reward for his pains.

National Railways. By James Hole. London: Cassell and Co., 1893.

This is a more important work to the statistician than the title would seem to indicate. The object of the work is to advocate the purchase of railways by the State, and the author, to support his argument, includes a great deal of information concerning railways all over the world: the English, American, colonial, and foreign systems being contrasted with each other, and their merits and demerits carefully considered. There are also many facts concerning various questions of the day, such as the comparative neglect of the third class passenger, workmen's fares, the zone system, railway rates, &c.; and the experiences of any other countries in which different experiments have been tried in connection with such details are discussed. The book will especially be found useful by those requiring information concerning the general condition of railways abroad at the present time.

Suicide and Insanity. By S. A. K. Strahan, M.D. London: Swan, Sonnenschein, and Co., 1893.

This work is written far more with the object of elucidating the factors promoting suicide, than of discussing the different forms which insanity may take; in fact the latter is only considered in its relation to the former. The work forms a valuable contribution to our knowledge of the motives which lead people to put an end to life. Considering the subject first from the historical and racial points of view, the author proceeds to investigate its connection with various forms of insanity, and the influence of other factors such as provocation, nationality, climate, religion, &c. Throughout, the importance of heredity is impressed upon the reader; and to it Dr. Strahan attributes the increase of suicide during recent years.

Eighth Annual Report of the Commissioner of Labor, 1892. Industrial Education. Washington: Government Printing Office, 1893.

Mr. Carroll Wright's eighth annual report is devoted to a subject of great immediate interest. Owing to a disappointment, respecting the amount of money available for the purposes of the inquiry, its character has, he informs us, undergone a change. Originally it was contemplated to make a thorough investigation into the subsequent career of those who had been educated in "manual training, trade and technical schools." There are, it is true, even in the report as published chapters relating to the kindergarten, to manual training in conjunction with book work, to manual training and trade instruction in reformatories, and to the effect of this training and instruction on the individual. But these chapters, which are the result of original inquiry, have been curtailed from lack of the requisite funds, and they are placed at the end of the report. The most prominent position is given to the earlier chapters, relating to the present condition of industrial education in the United States and other countries of the world. For English students this will form an useful supplement to the information contained in the report of our own Technical Education

Commission, much of which is necessarily now out of date. The countries, with which the report deals, include Austria, Belgium, France, Germany, Italy, Russia, Scandinavia, and Switzerland, besides our own and the United States. In an introduction an attempt is made to define some common terms. Manual training is distinguished as instruction in tool work as an educational discipline from trade school teaching, "the sole or primary aim of which is to give the apprentice a thorough and practical knowledge of some handicraft." The technical school is a "high grade trade school," including instruction in the "scientific principles" of a craft; and, finally, institutes of technology are of University rank. Manual training, originating in Russia, and extending to Sweden, and thence to the whole world, has, so the report maintains, reached its highest development in the States, and they also claim a pre-eminence in institutes of technology. But they allow a reversal of conditions with regard to the second or intermediate stage of technical and trade schools. Here the report frankly acknowledges the superiority of European systems, although the British reader, turning to that section which deals with his own country, will find that little, if any, of this flattering unction can be taken to himself. The movement in favour of technical education in Great Britain is, as the report states, of so recent a date that its effects are not very apparent, but the opinion is advanced that there "appears to be a lack of that exactness and critical fidelity to a high standard in the requirements from pupils which is so marked a feature of the technical training of the United States." The writer admits, however—and the British reader may draw such consolation as he pleases—that the "recreative and social features which are the seemingly inseparable concomitants in the British mind of all study, industrial especially," may include an advantage that "fairly offsets the lack mentioned."

La Population: les causes de ses progrès et les obstacles qui en arrêtent l'essor. Par Edouard van der Smissen. Paris: Guillaumin et Cie., 1893.

This book, which has been "crowned" by the French Academy of Moral and Political Science, contains an elaborate review of the subject of population in all its bearings. As the author remarks in an introduction, it is a curious instance of the irony of fate that a prize founded by an economist (Rossi)—who was a sincere and ardent disciple of Malthus—should be applied to reward an inquiry into the methods designed by antiquity to encourage population. Yet, as he shows in the course of the inquiry, it seems by no means impossible that we may be driven by the logic of facts to revert to this position. The apparent tendency of affairs, which gave rise to the apprehensions of Malthus, seems now to be likely to yield in its turn to a tendency which may well occasion apprehensions of an opposite character. For, we must remember, the position which France has already reached, appears, if we may judge by the evidence of our own census, to be one to which we are approximating. M. van der Smissen, however, shares neither the fears of Malthus, who, he thinks, was mistaken, nor the forebodings

of those who have noticed with serious misgiving the stationary state of the French population. He believes that a candid and thorough examination of facts conducts to a more sober and hopeful view. Accordingly, after reviewing the general position, he proceeds in his first book to investigate what we may call the pre-Malthusian period. This is divided into three sections—one dealing with antiquity, with slavery and the history of Greece and Rome, the second treating of the middle ages, and the third of the modern epoch, extending from the 16th to the 18th century. The second book is devoted to a criticism of Malthus, and in the third and concluding book M. van der Smissen investigates the post-Malthusian period. He discusses in this section the chief economic, social and legislative influences affecting population. Under the first he places emigration and colonisation, and improvements in agricultural and manufacturing industry. Under the second he considers the influence of luxury, of religion, and of war, and of sanitary and medical science, and physiological and racial considerations. Under the third and last head, laws affecting marriage and inheritance are described; and the final chapter is devoted to that new and significant feature of modern legislation on the subject—laws restraining immigration.

Wool and Manufactures. By Worthington C. Ford. Washington: Government Printing Office, 1894.

The preparation of this important work of 700 pages, issued by the Treasury Department of the United States, has been entrusted to Mr. Worthington C. Ford, the Chief of the Bureau of Statistics in that department. The book is nominally a new edition of one published by the same Bureau in 1888, with the facts brought up to date, but it is a far larger volume, and contains much information that was not included in the earlier volume. The contents include statistics concerning the production, consumption and trade in wool and woollen manufactures, the number of sheep, prices, tariffs, &c., throughout the world: the figures being taken, wherever practicable, from the official returns of the various countries, or when this is impossible, as in the East, from estimates contained in the various consular reports, &c. The book consequently forms a valuable and exhaustive summary of the latest official returns on the subject.

La Tyrannie Socialiste. Par Yves Guyot. Paris: Ch. Delagrave, 1893.

Les Principes de '89 et le Socialisme. Par Yves Guyot. Paris: Ch. Delagrave, 1894.

M. Yves Guyot is known to Englishmen, both by his writings and by his actions. He has, as he states in the preface to the first of the two publications before us, maintained for some while a strenuous opposition to the proposals of the socialist party, which in France, as in so many other countries, appears, for weal or for woe, to be daily acquiring fresh influence. In an official position as a French minister, and in a more private capacity, he has been brought into close contact with these proposals, and in

the two books before us he supplies reasons for the faith that is in him, founded alike on fact and on theory. In the first he maintains that socialism is essentially retrograde, and in the second he urges that its creed conflicts in every important respect with that enunciated by the leading spirits of the great French Revolution. No reader of these spirited pamphlets can fail to recognise that the author has the courage of his opinions, and that the knowledge, on which those opinions are based, is as unimpeachable as is the vigour with which they are uttered. Nor can M. Guyot be accused of misrepresenting the broad tendencies of many of the socialist proposals of the present day; and we may remember that there is more danger of such proposals being carried to an extreme conclusion in a country which, like France, prides itself on being logical. In both books M. Guyot takes the articles of the socialistic creed *seriatim*, and exhibits with unsparing scorn the fallacies on which they are often founded. In the second of the two he lays stress on their inconsistency with the principles proclaimed to the world in 1789, which were, he argues, founded in reality, not on mere *à priori* ideas, but equally on the teaching of experience. This second volume is divided into four sections. In the first, entitled, "principles and prejudices," M. Guyot inquires into the appropriate method for the profitable study of political and social science. In the second he endeavours to establish the position that the principles of 1789 are, in their essence, the outcome of the experience of the centuries. In the third he indicates the conflict between those principles and contemporary socialism, whether we have regard to its theory or to its practice. And in the fourth and concluding section he institutes a contrast between socialism and individualism, to the advantage of the latter, and the serious discredit of the former. In the earlier publication his theme, while directed to the same goal, travels over a somewhat wider field. He first justifies his application of the epithet "retrograde" to modern socialism. The principal article of its creed is the substitution of State regulation for freedom of contract, while the progress of society has been hitherto achieved by the substitution of individual decisions in matters of politics, religion, and the intellect for the dogmatic pronouncements of authority. And hence socialism is involved in inevitable contradiction, both in its theory and its practice. Socialists profess to aim at progress, but it is progress backwards and not forwards. They aspire to secure at once political freedom and economic tutelage. M. Guyot then proceeds to subject to a spirited and scornful criticism the sophisms of which, he holds, socialism is guilty; and this appears to us to be at once the most readable and the most convincing part of his book. Where he proceeds in his third section to examine the practical application of socialistic principles to modern legislation, he seems to pass to more doubtful ground, and he himself candidly recognises that the question becomes to some extent one of difference of degree. But he has little difficulty in demonstrating the extreme character of socialist demands, and the dangerous possibilities inherent in them. Section IV is devoted to an examination of socialist ideas of

legality and morality, and in Sections V and VI M. Guyot investigates with considerable detail the relations of strikes, especially those of recent origin, to the socialist movement. In a concluding section he sums up the results of his inquiry. Throughout both books he writes with the air of an experienced statesman and man of affairs, as well as with that of an eager and resolute advocate.

Staffeltarife und Wasserstrassen. Von Franz Ulrich. Berlin: Julius Springer, 1894.

The question of the proper charges for the carriage of goods has recently aroused considerable discussion, and has resulted in actual legislation, in this country; and the question is closely connected with the development of waterways as competitors with, or substitutes for, the railways on which the charges are, or are thought to be, excessive. Both these topics are handled in the volume before us. By *Staffeltarife* is apparently meant a scale of rates which increases by a less amount, the greater the distance which has to be traversed. It resembles those zone-tariffs, which have been introduced with some success for passenger travel in Hungary and elsewhere; and the author examines into its history and economic advantages and drawbacks with the patient and exhaustive spirit of inquiry characteristic of German investigators. He also treats with the same thoroughness the development of waterways, and their relations to railways, both in respect of mutual competition, and of connection with the State.

Das Sinken der Grundrente und dessen mögliche Sociale und Politische Folgen. Von Dr. Rudolph Meyer. Wien: Franz Doll, 1894.

The agrarian situation in the older countries of the world is rapidly becoming critical, and one of the most striking evidences of the increasing seriousness of affairs is to be found in the fall of rent. In the volume before us Dr. Rudolph Meyer inquires into the causes, and significance, and probable results, of the change which is thus taking place. He examines into the possibilities of the situation, should war break out; he sets forth the social condition of the landed proprietors of a particular North German province (that of Pomerania), which has followed on the fall in rent; he reviews the chief causes which have been instrumental in producing this result, such as the discovery of new sources of supply, in the United States, in Canada, and in Argentina, and the superior machinery devised and employed by Americans, whether in the form of field machinery, or in that of grain elevators; and lastly he endeavours to forecast the future. Throughout his book he makes an opportune use of illustrative statistics.

La Funzione del Tesoro nello Stato Moderno. Di Giulio Alessio. Padova: Fratelli Drucker, 1894.

In this monograph Professor Alessio institutes a systematic inquiry into the functions of the department of the Treasury in modern States. In his first chapter he dwells on the nature of

the influences which determine the direction and limits of its action. In his second he distinguishes three main functions—which he terms respectively, to quote the Italian phrases, *dislocatrice*, *elettiva*, and *liberatrice* or *risparmiatrice*. Of these the first is connected with the collection and disbursement of the revenue, the second is concerned with the management of the currency, and the third and last relates to the administration of the public debt. Professor Alessio then proceeds to describe the actual arrangements of the Treasury in the chief modern States; and these he divides into three main groups. The first, including France, Italy, the Austro-Hungarian Empire, the German Empire, and Russia, is distinguished from the second, which comprises England and its imitators, Belgium, Holland, Spain, and Alsace-Lorraine, while a third chapter is devoted entirely to the United States. In the first group the State concentrates the functions and authority of a treasury in its own person. In the second group we find an independent institution, like the Bank of England, in close relations with the State, while the United States form in a sense a class by themselves. Professor Alessio next considers with greater detail, and with reference to the different arrangements adopted in the different groups of nations, the three functions, which he has distinguished in his second chapter. He recognises the merits of the English system, but is alive to its defects, and to the difficulties which must attend its introduction into the midst of a different environment from that found in England itself. He attaches immense importance to the third function—that of the administration of the public debt; and the reorganisation and diminution of debt naturally attract anxious attention from an eminent Italian economist, who realises the critical position in this respect of his own country at the present moment.

Influenze Reciproche tra Movimento Operaio Produzione e Ricchezza. Di Pier Francesco Casaretto. Torino: L. Roux e C., 1893.

This book affords a fresh illustration of the rapidity and urgency with which in different countries of the world labour questions are forcing themselves to the front. The author has made an elaborate and thoughtful inquiry into the bearing of those labour movements, which in every civilised country are gathering force, and take shape with increasing frequency in the formation of powerful combinations, upon the progress of society. He considers the causes and effects of the forces, which he is examining, with reference to agriculture, to manufacturing industry, to mining, and to commerce and transportation. He points out that the question turns in the last analysis on the possibility of increased production, and he shows that experience proves that the tendency of advancing civilisation is to give to labour a share of this increased production, which steadily augments. In short he is in accord with the most recent tendencies of economic speculation, and the latest results of statistical inquiry, in this and other countries, and it is from the history and conditions of English industry that he draws many of his illustrations.

Le Forme del Salario. Di Riccardo Dalla Volta. Firenze: Fratelli Bocca, 1893.

In current discussions about wages, especially those of a socialistic complexion, it seems not infrequently to be forgotten that the wages system is in reality a very comprehensive description of a great variety of methods of remunerating labour. Professor Dalla Volta's little book will serve as a useful reminder of this important fact. After alluding in an introduction to the prominence of labour questions, whether theoretical or practical, and especially those relating to the remuneration of labour, and dealing in his first chapter with the character of the modern organisation of industry, he proceeds in the following chapters to explain, and comment on, the main varieties of the wages system. The sliding scale, and the sweating system, are passed in review no less carefully than the partnerships found in the Cornish mines, and the ordinary methods of payment by time or by piece. Professor Dalla Volta is acquainted with the literature of his subject—even with out of the way departments of it which might well have escaped the notice of a less vigilant inquirer—and he forms an independent opinion of his own about the conclusions of other writers. His book should, we think, prove a useful compendium to students of the question.

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Economic Journal. Vol. iv, No. 13, March, 1894—

“Métayage” in Western France: *H. Higgs and R. Lambelin.* Some economic aspects of the Coal Dispute, 1893: *J. E. C. Munro.* The Coal Strike and a Minimum Wage: *F. D. Longe.* The Theory of International Value (Part 1): *Prof. F. Y. Edgeworth.* The Wife's contribution to Family Income: *Miss Ada Heather Bigg.* The effects of the Depreciation of Silver, with special reference to the Indian Currency experiment: *Prof. J. S. Nicholson.*

Economic Review. Vol. iv, No. 2, April, 1894—

Moral Threads in Social Webs: *Rev. E. S. Talbot.* A Defence against “Sweating”: *H. W. Wolff.* Three months in the London Milk Trade: *Anon.* Christianity and the Charity Organization Society: *Rev. Canon S. A. Barnett.* The Proposed Industrial Union of Employers and Employed: *T. W. Bushill.*

UNITED STATES—

American Economic Association Publications. Vol. viii, Nos. 4 and 5, July and September, 1893—

Public Assistance of the Poor in France: *E. G. Balch.*

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American Statistical Association Publications. Vol. iii, New Series, No. 24, December, 1893—

Statistical Data for the Study of the Assimilation of Races and Nationalities in the United States: *R. Mayo-Smith*. Report of an International Mortality Standard, or Mortality Index: *J. Körösi*. Comparative Statistics of Primary Education: *E. Levasseur*. Some Recent Results in Railway Statistics in the United States: *H. C. Adams*. Railway Statistics as Applicable to Earnings of Passenger Trains: *M. Riebenack*. Papers on Anthropometry by *E. M. Hartwell*, *F. Boas*, *W. T. Porter*, *E. Hitchcock*, *C. J. Enebuske*.

Annals of the American Academy of Political and Social Science. Vol. iv—

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Idea of Justice in Political Economy: *G. Schmoller*.

American Life Insurance methods: *M. M. Dawson*.

Relation of Taxation to Monopolies: *E. R. Johnson*.

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A History of Political Economy: *Dr. G. Cohn*, translated by *Dr. J. A. Hill*.

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Problems of Municipal Government: *E. L. Godkin*.

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Decade of Mortgages: *G. K. Holmes*.

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The Assignats: *E. Levasseur*. Mortgage Banking in America:

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Laws: *C. M. Platt*. British Local Finance: *G. H. Blunden*.

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A Universal Law of Economic Variation: *J. B. Clark*. The

English Railway Rate Question: *J. Mavor*. Alexander

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Saxon "Township": *W. J. Ashley*.

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The Condition of the Southern Farmer: *F. W. Moore*.

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De l'établissement d'une législation internationale sur le transport des marchandises par chemins de fer: *G. Durant*.

Les Institutions de crédit dans l'Empire russe: *M. Labordère*.

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Le Droit international privé et la Conférence de La Haye:

Prof. L. Renault.

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Les Finances italiennes: *V. Pareto*. La Caisse des retraites et le projet de la Commission: *E. Rochetin*. De la Durée de la Garantie d'Intérêt accordée aux chemins de fer français: *R.-G. Lévy*. Les Statistiques commerciales: *G. François*.

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La Crise des changes: *P. des Essars*. Les Etrangers en France: *V. Miquel*.

No. 5. May, 1894—

Résultats statistiques de neuf années de divorces: *V. Turquan*. L'Exportation industrielle des grands Etats: *A. Raffalovich*.

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No. 78. 16th March, 1894—

Comment étudier les Revendications ouvrières: *A. Béchaux*. L'Enseignement du droit et des sciences sociales dans les Universités italiennes: *E. Duthoit*. Enquête sur la condition des ouvriers agricoles: *A. Pourpory*.

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Le Socialisme et la Liberté d'association: *G. Picot*. Les Fabriques d'Eglise et leur nouvelle comptabilité: *M. Lambert*.

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Idées avancées: Idées rétrogrades: *U. Guérin*.

No. 82. 16th May, 1894—

La vraie Amérique: *R.-G. Lévy*.

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L'Economie politique, sa Théorie et sa Méthode: *G. Schmoller* (*continued in April and May*). De la Réforme des caisses d'épargne: *M. Mongin*. Sur l'Organisation de l'industrie de la soie à Venise dans le moyen-âge (xiii^e, xiv^e, et xv^e siècles): *Dr. R. B. d'Ajano*.

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Les deux directions de la Sociologie contemporaine: *M. Bernès*. La protection des intérêts économiques de la Femme mariée: *P. Cauwès*. La Mesure des transformations de la valeur de la Monnaie: *R. Zuckerkandl*. La Loi d'égalité et les Magasins Généraux: *L. Koch*.

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R. Jay. Une grande Cité et son marché central, le
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Die Lehre vom Ursprunge des Geldes: *W. Lotz.* Der deutsche Getreidehandel: *K. Wiedenfeld.* Die zweite Lesung des Entwurfes eines Bürgerlichen Gesetzbuches für das Deutsche Reich: *Greiff (continued in Heft 5).* Der Zolltarif Russlands: *A. Boyerdörffer.* Zur Münz- und Währungsfrage: *W. Lewis.*

Heft 4—

Die unehelichen Kinder in Berlin und ihr Schutz: *J. Neumann.* Die Organisation des Handwerks und die Regelung des Lehrlingswesens: *T. Hampke.* Die wirtschaftlichen Fragen des XXII deutschen Juristentages: *Zeller.* China und die Silberkrise: *J. Grunzel.*

Heft 5—

Die wirtschaftliche Thätigkeit der Kirche im mittelalterlichen Deutschland: *T. Sommerlad.* Die Schwankungen des Geldwertes (der Kaufkraft des Geldes) und die Juristische Lehre von dem Inhalte der Geldschulden: *E. Seidler.*

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Die neuesten Fortschritte auf dem Gebiete des Kriegesrechts: *K. Triepel.* Der Inkastaat: *Dr. O. Freiherr von Boenigk.*

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Zur Biographie des Stifters der Physiokratie, François Quesnay: *A. Oncken.* Justus Christof Dithmar, ein Beitrag zur Geschichte der Neuordnung der Landesverwaltung unter König Friedrich Wilhelm I und zur Geschichte der Universität Frankfurt a.O.: *Dr. O. Gerland.* Zur Geschichte und Statistik des Studiums an den italienischen Universitäten: *Dr. K. Franken-stein.*

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L'esposizione finanziaria: *La Direzione.* Di alcuni teoremi fondamentali per la teoria matematica dell' imposta: *Barone.* I moti di Sicilia: *La Loggia.* Tariffa daziaria di alcuni principali generi di consumo in vigore nei comuni chiusi della Sicilia: La questione delle otto ore di lavoro (*continued in next two numbers*): *L. Albertini.*

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L'azione dello Stato sul corso dei cambi ed i criteri dell' amministrazione italiana: *R. Benini.* Dati e note sull' esercizio dei pubblici servizi comunali: *A. Raddi.* La crisi in Sicilia (*continued in next number*): *Visconte C. de Lestrade.*

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Le economie militari: *T. M.* Sul sistema meccanico Holle- rith per lo spoglio delle notizie contenute nelle schede di un censimento della popolazione o di altri documenti statistici: *G. R.*

VII.—*Additions to the Library.*

Additions to the Library during the Quarter ended 15th June, 1894, arranged alphabetically under the following heads:—(a) Foreign Countries; (b) India and Colonial Possessions; (c) United Kingdom and its Divisions; (d) Authors, &c.; (e) Societies, &c. (British); (f) Periodicals, &c. (British).

Donations.	By whom Presented (when not purchased).
(a) Foreign Countries.	
Argentine Republic—	
Comercio Exterior. Datos trimestrales del, año 1893. No. 80, 8vo.	The Director-General of Statistics
Higiene Publica. Anales de. (Current monthly numbers)	
Message of the President of the Republic to Congress, 12th May, 1893. 8vo.	Dr. E. R. Coni
BUENOS AYRES (CITY). Bulletin mensuel de Statistique municipale. (Current numbers)	J. Scott Keltie, Esq.
Instituto Geografico Argentino. Boletin del, Tomo xiv, Cuadernos 9—12. Maps, 8vo., 1894	The Municipal Statistical Bureau
	The Institute
Austria-Hungary—	
"Austria." Archiv für Gesetzgebung und Statistik auf den Gebieten der Gewerbe, des Handels und der Schifffahrt. Hefte 1—4, 8vo. 1894.....	The Statistical Department, Ministry of Commerce
Zoll-Compass. Jahrgang v. Lieferung 2. Russland. 8vo. 1894	
Banken. Statistik der, für 1890 und 1891. Fol.....	The Central Statistical Commission
Concursverfahrens. Ergebnisse des, in den im Reichsrathe vertretenen Königreichen und Ländern im 1889. Fol.	
Consulats-Behörden. Jahresberichte der k. und k. österreichisch-ungarischen, Jahrgang xxii (Bogen 1—5). 8vo. 1894.....	The Statistical Department, Ministry of Commerce
Dampfkessel. Statistik der, nach dem Stande vom Jahre 1890. 8vo. 1894	
Handel. Statistische Übersichten betreffend den auswärtigen, des österreichisch-ungarischen Zollgebiets. (Current monthly numbers).....	The Central Statistical Commission
Handels. Statistik des auswärtigen, des österreichisch-ungarischen Zollgebiets im Jahre 1892. Band iii, Vormerkverkehr. Waren-Durchfuhr. 8vo. 1894....	
Industrie. Statistik der österreichischen, nach dem Stande am Ende des Jahres 1890. 8vo. 1894.....	The Central Statistical Commission
Statistische Monatschrift. (Current numbers)	
Volkszählung vom 31 Dec., 1890. Berufsstatistik nach den Ergebnissen der, Hefte 2—13, fol.	
HUNGARY—	
Bewegung der Bevölkerung der Länder der Ungarischen Krone in 1890 und 1891. Fol., maps....	The Royal Hungarian Statistical Bureau
Landwirtschaftliche Production der Länder der Ungarischen Krone in 1891 und 1892. Fol.	
Volkszählung. Ergebnisse der in den Ländern der Ungarischen Krone am anfang des Jahres 1891 durchgeführten, Theil 3. Gebäude-Statistik. Fol.	The Municipal Statistical Bureau
PRAGUE. Bulletins hebdomadaires et trimestriel de la ville de Prague et des communes-faubourgs. (Current numbers)	

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(a) Foreign Countries— <i>Contd.</i>	
Belgium—	
Annuaire Statistique de la Belgique. 1 ^{re} année, 1870, et 24 ^e année, 1893. 8vo.	The Bureau of General Statistics
Bulletin de la Commission Centrale de Statistique. Tomes v et vii. 4to. 1853-57	
Budgets des Recettes et des Dépenses du Royaume pour l'Exercice 1894. Fol. 1893	J. S. Keltie, Esq.
Projets de Budget du Royaume pour l'Exercice 1894. Amendements. Fol. 1893	
Commerce avec les Pays Etrangers. Tableau général du, pendant 1892. Diagrams, la. fol. 1893	The Bureau of General Statistics
Exposé de la situation du Royaume. (Période décennale de 1841-50.) La. 4to. Bruxelles. 1852	
Mouvement Commercial avec les Pays Etrangers. (Current monthly numbers)	Dr. E. Janssens
Population. Relevé officiel du Chiffre de la, par Province, par Arrondissement administratif, et par Commune au 31 Dec. des années 1885-92. 8 vols.	
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Annuaire Statistique et Historique Belge. Années 1855, 56, 59, 62-66. 8 vols., 8vo. Bruxelles, 1855-66	The War Office
Bulgaria. Mouvement de la Population dans la Principauté pendant 1890. 4to.	The Statistical Bureau
Chile—	
Anuario Estadístico de la Republica correspondiente a los años 1885-86. La. fol. 1892	J. S. Keltie, Esq.
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Labour Gazette. Journal of Labour Department of Board of Trade. (Current monthly numbers)	
Mines and Minerals. Statistical Summaries for 1893....	Purchased
Mint. Twenty-third and twenty-fourth Annual Reports of the Deputy Master of the Mint for 1892 and 1893. 2 vols., 8vo. Plate.....	The Deputy Master of Mint
Opium. First Report of Royal Commission on, 1894	Purchased
Railway Rates. Reports of Select Committee, 1893....	
Sea Fisheries. Statistical Tables for 1893	The Board of Trade
Trade and Navigation. (Current monthly returns)	
Water Supply, London. Reports of Royal Commission on, 1893-94	Purchased
Great Britain—	
Agricultural Produce Statistics of Great Britain for 1893. [C-7316].....	The Board of Agriculture
Agricultural Returns of Great Britain, 1893. [C-7256]	
England and Wales—	
Births, Deaths, and Marriages. Fifty-fifth Annual Report of the Registrar-General of, 1892. [C-7238]	The Registrar-General of England
Quarterly Return of Marriages to Dec., 1893; Births and Deaths to March, 1894. No. 181	
Births and Deaths in London, and in twenty-seven other Great Towns. (Current weekly returns)	The Trustees of the Museum
British Museum. Catalogue of Printed Books. 8 parts, 4to. 1894	
London—	
London Statistics, 1892-93. Vol. iii. Diagrams. Fol.	The London County Council
Metropolitan Asylums Board. Reports of the Statistical Committee, &c., for 1893. Maps, 8vo....	The Statistical Committee
Royal Commission, 1893. Statement as to the origin, position, powers, duties, and finance of the Corporation of London. Fol., 1893	The Town Clerk, Guildhall
HULL. Chamber of Commerce and Shipping. Annual Report of the Council for 1892-93. 8vo.	Sir Charles M. Kennedy, K.C.M.G.
LIVERPOOL. Free Public Library, Museum, and Walker Art Gallery. 41st Annual Report for 1893	The Chief Librarian
MANCHESTER. Weekly and Quarterly Returns of the Medical Officer of Health. (Current numbers)	The Medical Officer
WORTHING. Report on M. Hermite's Treatment of Sewage. 9 pp., 4to. Worthing, 1894	Dr. Charles Kelly
MERSEY. Report on the present state of the Navigation of the river Mersey, 1893. 8vo.	Admiral Sir G. H. Richards, K.C.B.

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(c) United Kingdom and its Divisions—Contd.	
Ireland—	
Births and Deaths in Dublin, and in fifteen of the principal Urban Sanitary Districts. (Current weekly returns)	The Registrar-General of Ireland
Quarterly Return of Marriages to Dec., 1893; Births and Deaths to March, 1894. No. 121.....	
Congested Districts Board for Ireland. Second Annual Report. 1894. 8vo.	Purchased
DUBLIN Metropolitan Police. Statistical Tables for 1893. Fol.	The Chief Commissioner of Police
Scotland—	
Births, Deaths, and Marriages in the eight principal Towns. (Current weekly and monthly returns)	The Registrar-General of Scotland
Quarterly Return of Births, Deaths, and Marriages, registered during quarter ending 31st March, 1894	
Supplement to monthly and quarterly returns of Births, Deaths, and Marriages registered in 1893; also Vaccination Returns relative to Children born in 1892	
(d) Authors, &c.	
ALESSIO (GIULIO). La Funzione del Tesoro nello Stato moderno. 142 pp., 8vo. Padova, 1894	The Author
ARGYLL (DUKE OF). The Unseen Foundations of Society, an examination of the fallacies and failures of economic science due to neglected elements. xx + 591 pp., 8vo. 1893	Purchased
ATKINSON (EDWARD, LL.D.). The Financial Outlook. An Address to the New York State Chamber of Commerce, 5th April, 1894. 23 pp., 8vo. New York, 1894	The Author
BEETON (HENRY R.). The Case for Monetary Reform. 48 pp., 8vo. 1894	
BENTHAM (JEREMY). Defence of Usury; showing the impolicy of the present legal restraints on the terms of pecuniary bargains; in letters to a Friend. To which is added a letter to Adam Smith, LL.D., on the discouragements opposed by the above restraints to the progress of inventive industry. 3rd edition, to which is also added, 2nd edition, a protest against law taxes. 6 + 206 + 70 pp., 8vo. 1816	Purchased
BIDDLE (D.). The Infectious Diseases (Notification) Act, and its effect in the large towns of England. 4 pp., 4to. 1894	The Author
BLENCK (E.). Die Zunahme der Blitzgefahr und die Einwirkung des Blitzes auf den menschlichen Körper. 28 pp. Plates. 8vo. Berlin, 1894.....	"
BOOTH (CHARLES). The Aged Poor in England and Wales. Condition. 8 + 527 pp., 8vo. 1894	"
BRENTANO (LUJO). Hours and Wages in relation to Production. (Translated by Mrs. William Arnold.) viii + 143 pp., 8vo. 1894	Purchased
BUXTON (SYDNEY) and BARNES (GEO. S.). Handbook to the Death Duties. viii + 109 pp., 8vo. 1890	"

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(d) Authors, &c.—Contd.	
CLEMENTS (GEORGE). Clements' Customs Guide, and British and Colonial Tariff for 1853. xxvi + 394 pp., 8vo.	The War Office
COHEN (JOSEPH). Present value of 1 <i>l.</i> monthly, 1 to 360 months at 4, 4½ to 8 per cent. per annum; also other tables for building society mortgage valuations. 36 pp., 16mo. [1894].....	
COOPER (JOSEPH). Cooper's Tabular Guides to Industrial Life Assurance, and Ordinary Life Assurance. Folded sheets. 1894	The Author
FERRARIS (CARLO F.). Nuovi appunti sulla Statistica della coltura intellettuale. Nota. 14 pp., 8vo. Venezia, 1894	
FREDERIKSEN (D. K.). Mortgage Banking in America. 32 pp., 8vo. Paris, 1894	"
GARNIER (RUSSELL M.). History of the English Landed Interest. Its customs, laws, and agriculture. (Modern Period.) xx + 564 pp., 8vo. 1893	
GEERING (DR. T.). Das Handelsjahr. Ein Beitrag zur besseren Berücksichtigung des Momentes der Zeit in der Verwaltungsstatistik. 7 pp., 4to. 1894	M. N. C. Frederiksen
HARDY (RALPH PRICE). Enquiry into methods of representing and giving effect to the Experience of a Friendly Society; and on the Hearts of Oak Benefit Society and its experience for 1884-91. 70 pp., 8vo. 1894	
HOOD (W. CHARLES). Statistics of Insanity; embracing a report of Bethlem Hospital, from 1846 to 1860, inclusive. 122 pp., 8vo. 1862.....	The Author
HÜBNER (OTTO). Jahrbuch für Volkswirtschaft und Statistik. 2. Jahrgang. 558 pp., 8vo. Leipzig, 1854	
JURASCHEK (DR. FRANZ VON). Weltproduktion und Welthandel. Diagrams. 37 pp., 8vo. Leipzig, 1894....	Purchased
MANDELO (JULES). Le Mouvement social en Hongrie. 16 pp., 8vo. Paris, 1894	
Meyer (Dr. Rudolph)— Das Sinken der Grundrente und dessen mögliche sociale und politische Folgen. ix + 150 pp., 8vo. Wien, 1894	The War Office
Zur Valuta-Frage. 80 pp., 12mo. Wien, 1894	
MINORIO (DR. J.). Jahrbuch für Volks- und Staatswirtschaft aller Länder der Erde. Jahrgang 1. viii + 451 pp., 8vo. Berlin, 1880.....	The Author
MOUAT (FREDERIC J., M.D.). Education and Training of the Children of the Poor. 61 pp., 8vo. 1880	
NORMAN (JOHN H.). Sailor's and Traveller's Guide to 2,070 exchanges of the world's 46 current gold and silver coins, &c. Slips	"
PASSY (H.). On large and small farms, and their influence on the Social Economy; including a view of the progress of the division of the soil in France since 1815. 174 pp., 8vo. 1848	
PERRIS (GEORGE H.). The Fisheries Year-Book, 1890. Edited by, (First and last number.) 190 pp., 8vo. 1890	The Editor

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(d) Authors, &c.—Contd.	
PRASCHKAUER (MAXIMILIAN). Ein Abriss ueber das Englische Arbitrations- (Schiedsrichter) Wesen mit einem Anhang . . . 86 pp., 8vo. London und Leipzig, 1894	The Author
RAE (JOHN). Eight hours for work. xii + 340 pp., 8vo. 1894	
RAFFALOVICH (ARTHUR). Le Marché Financier en 1893-94. xxi + 477 pp., 8vo. Paris, 1894.....	Messrs. Macmillan and Co.
RECLUS (ELISÉE). Nouvelle Géographie Universelle. La Terre et les Hommes. Tome xix. Amérique du sud. Maps and plates. La. 8vo. Paris, 1894.....	The Author
ROBERTSON (J. BARR). The Indian Currency. 23 pp., 8vo. 1894	Purchased
SAUERBECK (AUGUSTUS). Course of average prices of General Commodities in England. [1820-93.] (Sheet)	The Author
SEYD (ERNEST). The Silver Question in 1893. A simple explanation. 81 pp., 8vo. 1894	
Sitta (Pietro)— Operai e Fanciulli Italiani in Inghilterra. Appunti di Statistica sociale. 45 pp., 8vo. Catania, 1894	"
Le problème de l'immigration dans les Etats-Unis de l'Amérique. 18 pp., 8vo. Paris, 1893	
STIEDA (WILH.). Arbeitszeit im Bäckerei- und Konditoreigewerbe; 7 pp., 8vo. Gewerbegericht; 10 pp. Jugendliche Arbeiter; 15 pp. Kinderarbeit und ihr Schutz in Deutschland; 7 pp.; 1893. Koalition und Koalitionsverbote; 8 pp. Normalarbeitstag; 8 pp. Sonntagsarbeit; 10 pp. Trucksystem; 6 pp.....	"
Statesman's Year-Book for 1894. Edited by J. Scott Keltie. 8vo. 1894.....	
TODD (REV. EDGAR). The Church and the Poor. A Pension at Sixty. Suggestions for an Old Age Pensions Scheme. 24 pp., 8vo. Birmingham. [1894]	The Editor
VAN DER SMISSEN (EDOUARD). La Population, les causes de ses progrès et les obstacles qui en arrêtent l'essor. 561 pp., 8vo. Paris, 1893	Frank Powell, Esq.
Wheat. Production and Distribution. Duties on Food Imports. Chart of Imports. (Reprinted from "Dornbusch.") 18 pp., 4to. 1894.....	Purchased
Wolff (Henry W.)— A defence against "Sweating." 11 pp., 8vo. 1894	
Les Banques populaires au point de vue coopératif. 27 pp., 8vo. Bordeaux, 1894	The Editor
WORTHINGTON (T. LOCKE). Dwellings of the Poor and Weekly Wage-Earners in and around Towns. xv + 164 pp., 8vo. Plates. 1894.....	
(e) Societies, &c. (British).*	
Association of Chambers of Commerce of the United Kingdom. Report and Resolutions adopted at the 34th Annual Meeting, March, 1894. 8vo.	The Author
	Purchased
James Hole, Esq.	

* Foreign and Colonial Societies will be found under the various Countries or Possessions to which they belong.

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(e) Societies, &c. (British)—Contd.	
British Economic Association. The Economic Journal. No. 13, March, 1894	The Association
Economic Review. Vol. iv, No. 2. 8vo. 1894	
Corporation of Foreign Bondholders. 19th and 20th Annual General Reports of the Council for 1891 and 1892. 2 vols., 8vo.	J. S. Keltie, Esq.
Cunard Line, The, and the World's Fair, Chicago, 1893. 82 pp., maps and plates, obl. 8vo. 1893.	
East India Association. Journal. (Current numbers) ...	The Association
Industrial Conference. Report of Proceedings at the preliminary, held in London, March 16th, 1894. With description of a suggested Industrial Union of Employers and Employed. 72 pp., 8vo. 1894	
Institute of Actuaries. Journal. Vol. xxxi. Part 3. 1894	The Institute
Institute of Bankers. Journal. (Current numbers)	
Institution of Civil Engineers. Minutes of Proceedings. Vol. cxv, 1893-94. Plates, 8vo.	The Institution
Institution of Mechanical Engineers. Proceedings, No. 4, 1893. Plates. 8vo.	
Insurance Institute of Ireland. Report. Session 1892-93. 8vo. Dublin, 1894	The Institute
London Chamber of Commerce Journal. (Current numbers)	
Manchester Literary and Philosophical Society. Memoirs and Proceedings. Fourth Series. Vol. viii, No. 2. 1893-94. Plates, 8vo.	The Society
Manchester Statistical Society. "Hours and Cost of Labour in the Cotton Industry at home and abroad," by F. Merttens. 1894	
Peabody Donation Fund. 29th Annual Report of the Trustees, for 1893. 4to.	J. Crouch, Esq.
Political Economy Club—	
Minutes of Proceedings, 1882-89. Roll of Members and questions discussed. 8vo. 1889	G. H. Murray, Esq.
Minutes, questions discussed, &c., 1889-90, 1890-91, 1891-92. Three parts, 8vo.	
Royal Agricultural Society. Journal. Third Series. Vol. v, part 1. 1894	The Society
Royal Asiatic Society. Journal for April, 1894	
Royal Geographical Society. Geographical Journal. (Current numbers)	The Institution
Royal Institution of Great Britain. Proceedings. Vol. xiv, part 1, No. 87. 1894	
Royal Medical and Chirurgical Society—	The Society
Catalogue of Library. Supplement vii. Additions to Library, 1892-93. 8vo.	
Medico-Chirurgical Transactions. Vol. lxxvi, plates, 8vo. 1893	The Exors. of the late Mr. Edmonds
Royal Society. Proceedings. (Current numbers)	
Royal Statistical Society. Journal. 44 back numbers	N. A. Humphreys, Esq.
Royal Statistical Society. Journal. 63 back numbers....	
Royal United Service Institution. Journal. (Current numbers)	The Institution

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(e) Societies, &c. (British)—Contd.	
<i>Sanitary Institute—</i>	
Transactions. Vol. xiv. 1893.....	The Institute
Journal of the Institute. Vol. xv, part 1. April, 1894	
Seamen's Hospital Society. General Report of cases under treatment at the Hospitals and Dispensaries of the. 8vo. 1894.....	The Society
Society of Arts. Journal. (Current numbers)	
<i>Surveyors' Institution—</i>	
Catalogue of the Forestry Collection of the Institution. April, 1894. 8vo.	The Institution
Transactions. (Current numbers)	
Tramways Institute of Great Britain and Ireland. Quarterly Journal. No. 14, 1894. 4to.....	Messrs. Griffiths and Millington
(f) Periodicals, &c. (British).*	
Accountant, The	The Editor
Athenæum, The	
Bankers' Magazine, The.....	"
British Trade Journal, The	
Building Societies and Land Companies' Gazette, The	"
Colliery Guardian	
Commerce.....	"
Commercial World, The.....	
Economist, The	"
Finance Chronicle, The	
Fireman, The	"
Insurance Post, The	
„ Record, The	"
Invention	
Investors' Monthly Manual, The	"
Iron and Coal Trades' Review, The	
Iron and Steel and Coal Times.....	"
Machinery Market, The	
Nature	"
Policy-Holder, The	
Review, The.....	"
Sanitary Record, The	
Shipping World, The	"
Statist, The	
Technical World	"
Local Government Directory, Almanac and Guide for 1892	
	Dr. F. J. Mouat, LL.D.

*Purchases.***Periodicals, &c.—**

Banking Almanac and Directory, 1894.

British Almanac, 1894.

* Foreign and Colonial Periodicals will be found under the various Countries or Colonies in which they are issued.

Purchases—Contd.

- Colonial Office List for 1894.
County Councils and Municipal Corporations Companion and Diary, 1894.
Financial Reform Almanack, 1894.
Foreign Office List, 1894.
Ham's Inland Revenue Year Book, 1894.
Hazell's Annual, 1894.
Howe's Classified Directory to Metropolitan Charities, 1894.
India Office List for 1894.
Kew Bulletin. (Current numbers.)
Official Year Book of Scientific and Learned Societies for 1894.
Palmer's Quarterly Index to the Times.
Publishers' Circular. (Current weekly numbers.)
Stock Exchange Year Book, 1894.
Whitaker's Almanack, 1894.
Willing's Press Guide for 1894.
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JOURNAL
OF THE ROYAL STATISTICAL SOCIETY,
SEPTEMBER, 1894.

REPORT of the COUNCIL for the FINANCIAL YEAR ended 31st December, 1893, and for the SESSIONAL YEAR ending 26th June, 1894, presented at the SIXTIETH ANNUAL GENERAL MEETING of the ROYAL STATISTICAL SOCIETY, held at the Society's Rooms, 9, Adelphi Terrace, Strand, London, on the 26th of June, 1894.

THE Council have the honour to submit their Sixtieth Annual Report.

The roll of Fellows on the 31st December last as compared with the average of the previous ten years was as follows—

Particulars.	1893.	Average for the previous Ten Years.
Number of Fellows on 31st December	964	981
Life Members included in the above	176	162
Number lost by death, withdrawal, or default	66	62
New Fellows elected (and one resignation cancelled)	36	83

Since the 1st January last, 25 new Fellows have been elected, and the number at present on the list is 960.

The Society has to deplore the deaths of the following members since June last year. The list includes the names of General Sir George Balfour, K.C.B., D.L., who had been a Fellow since 1848; Dr. Robert Lawson, who was serving on the Council of the Society at the time of his decease; and the Right Hon. the Earl of Lovelace, F.R.S., who was the last surviving Original Member of the Society:—

Deaths of Fellows from June, 1893—June, 1894.

		Date of Election.
<i>c d p</i> (2)	Balfour, General Sir George, K.C.B., D.L.	1848
<i>d</i>	Culley, George, C.B.	1887
	Elliot, Sir George, Bart., M.P.	1872
<i>d</i>	Gibb, Thomas E.	1872
	Hawksley, Thomas, F.R.S.	1879
	Humphreys, George, M.A., F.I.A.	1872
	Kempson, William	1889
<i>c d p</i> (2)	Lawson, Robert, LL.D.	1873
	Lord, John	1888
<i>c d p</i> (1)	Lovelace, The Right Hon. the Earl of, F.R.S.	1834
	McKay, Andrew D.	1890
	Pearson, Professor C. H.	1857
	Percival, William	1887
	Selwyn, Captain Charles W.	1886
	Spence, James	1891
<i>d</i>	Woolhouse, Wesley S. B., F.R.A.S.	1838

Death of Honorary Fellow.

Langton, John, M.A. (Canada)	1876
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The financial condition of the Society is exhibited in the accompanying table, in which the particulars are contained for the twenty-five years 1869-93.

The papers read and the members elected at each of the monthly meetings have been as follows:—

SESSION 1893-94.

First Ordinary Meeting, Tuesday, 21st November, 1893.

Dr. ROBERT GIFFEN, C.B., F.R.S., Hon. Vice-President, in the Chair.

The following were elected Fellows:—

John Appleyard.	Vincent Clarence S. O'Connor.
Frederic James Atkinson.	Alexander William Payne.
Ernest Aves, M.A.	Charles Herbert E. Rea.
Thomas William Bushill.	Richard Pennefather Rothwell.
J. H. D. Davidson.	Cecil Roy Saunders, F.I. Inst.
Mrs. Millicent Garrett Fawcett.	Professor Dr. Pietro Sitta.
Ernest L. Franklin.	Richard Teece, F.I.A., F.F.A.
Arthur Horace Gadsden.	Thomas Tyrer, F.I.C., F.C.S.
John Hyde.	Rev. John Frome Wilkinson, M.A.

The Howard Medal (with 20*l.*) was presented to Hugh Richard Jones, M.A., M.D., for his Essay on "Perils and Protection of "Infant Life, with Statistical Illustrations where practicable."

c Indicates those who had served on the Council.

d Indicates those who had been Donors to the Library.

p Indicates those who had contributed Papers, with the number.

1894.]

Report of the Council.—Session 1893-94.

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Year.	Number of Fellows on 31st December.	Number of Com-pouisers included therein.	Losses during Year by Deaths, &c.	Gains by Election, &c., during Year.	Ordinary Income.	Ordinary Expen-diture.	Income from all Sources.	Income from			Total Expen-diture.	Expenditure on		Amount Invested on 31st December.	Year.
								Annual Subscrip-tions.	Composi-tions.	Journal Sales.		Journal.	Library.		
1869....	400	62	24	37	£ 810	£ 733	£ 810	£ 617	£ 42	£ 103	£ 826	£ 279	£ 7	£ 1,200	1869
1870....	403	62	22	25	852	839	852	670	21	112	839	314	15	1,200	1870
'71....	431	63	17	45	880	793	880	657	63	115	804	317	15	1,200	'71
'72....	454	72	17	40	1,112	805	1,112	739	189	141	991 ^a	318	5	1,400	'72
'73....	530	75	34	110	1,231	1,026	1,248	832	189	167	1,284 ^a	384	17	1,600	'73
'74....	588	84	35	93	1,377	1,479	1,377	918	252	140	1,491	461	40	1,600	'74
'75....	607	87	31	50	1,231	1,723	1,231	928	105	133	1,733	449	18	1,271	'75
'76....	611	90	46	50	1,438	1,320	1,438	1,054	168	159	1,340	524	75	1,271	'76
'77....	683	101	40	112	1,597	1,285	1,597	1,117	252	151	1,476 ^a	474	49	1,471	'77
'78....	746	115	45	108	1,732	1,345	1,732	1,197	294	169	1,849 ^a	580	32	2,000	'78
'79....	783	119	52	89	1,698	1,427	1,698	1,350	126	176	1,808 ^a	671	34	2,400	'79
1880....	808	129	49	74	1,902	1,517	1,902	1,317	273	202	1,806 ^a	573	80	2,700	1880
'81....	807	130	45	44	1,649	1,400	1,649	1,356	84	145	1,697 ^a	609	37	3,000	'81
'82....	786	135	63	42	1,838	1,580	1,838	1,291	189	227	1,782 ^a	553	60	3,200	'82
'83....	860	139	41	115	1,774	1,635	1,778	1,351	126	150	1,943 ^a	585	49	3,500	'83
'84....	909	150	57	106	2,055	1,585	3,146 ^b	1,447	294	207	3,088 ^c	645	38	2,500	'84
'85....	928	148	55	74	1,812	1,832	2,062 ^d	1,452	63	188	2,070 ^e	625	27	2,500	'85
'86....	943	156	70	85	2,086	1,842	2,056	1,583	231	180	2,106 ^e	735	32	2,500	'86
'87....	977	160	59	93	2,029	1,745	2,029	1,621	126	188	2,135 ^f	609	87	2,500	'87
'88....	1,059	172	58	140	2,292	1,939	2,292	1,686	334	171	2,003	711	58	2,500	'88
'89....	1,060	175	69	70	2,115	1,904	2,115	1,678	126	229	2,060 ^g	623	146	2,500	'89
1890....	1,063	177	65	68	2,097	1,707	2,097	1,754	84	155	2,096 ^a	567	68	2,900	1890
'91....	1,019	172	80	36	1,976	1,744	2,076 ^h	1,707	42	146	1,957 ⁱ	582	172	2,900	'91
'92....	994	171	70	45	1,980	1,859	1,980	1,634	84	158	1,883 ^j	539	94	2,900	'92
'93....	964	176	66	36	1,904	1,921	1,904	1,560	124	128	1,921	578	63	2,900	'93

^a Includes purchase of Government stock.^a Includes Dr. Guy's legacy of 250*l*.^e Includes cost of part iv of Index to Journal.^b Includes sale of 1,000*l*. stock.^c Includes cost of Jubilee Volume.^d Includes Mrs. Lovegrove's legacy of 100*l*.^e Includes outlay for drainage repairs.^f Includes expense of moving to new premises.^g Includes cost of Catalogue and Index, and of Charter.^h Includes Mrs. Lovegrove's legacy of 100*l*.ⁱ Includes outlay for drainage repairs.^j Includes outlay for drainage repairs.

The President's Opening Address, "Life and Labour of the "People in London: First Results of an Inquiry based on the "1891 Census," was in his absence through illness, read by Mr. J. Argyle.

A cordial vote of thanks to Mr. Charles Booth for his Address was moved by Dr. G. B. Longstaff, seconded by Mr. T. H. Elliott, and carried by acclamation.

Second Ordinary Meeting, Tuesday, 19th December, 1893.

The President, Mr. CHARLES BOOTH, in the Chair.

The following were elected Fellows:—

Arthur C. Humphreys-Owen, J.P. | Percy Charlton Morgan.

Dr. Hugh R. Jones read a Paper (the Howard Medal Prize Essay) on "Perils and Protection of Infant Life."

In the discussion which followed, the undermentioned took part:—The President (Mr. Charles Booth), Mr. F. Hendriks, Dr. Francis Warner, Mr. Noel A. Humphreys, Mrs. Fawcett, Mr. A. H. Bailey, Mr. Rowland Hamilton, Mr. E. A. Rusher, and Dr. Jones in reply.

Third Ordinary Meeting, Tuesday, 16th January, 1894.

Dr. ROBERT GIFFEN, C.B., F.R.S., Hon. Vice-President, in the Chair.

The following were elected Fellows:—

Hugh R. Jones, M.A., M.D.	|	David Marshall.
Thomas Bassett Macaulay.	|	Frederick O. Smithers.

Mr. R. H. Hooker read a Paper on "Modes of Census-Taking "in the British Dominions."

In the discussion which followed, the undermentioned took part:—Dr. G. B. Longstaff, Mr. C. S. Loch, Mr. F. Hendriks, Mr. J. A. Baines, Dr. J. Körösi, Mr. A. H. Bailey, Major P. G. Craigie, Mr. N. A. Humphreys, Dr. R. Giffen (Chairman), and Mr. R. H. Hooker in reply.

Fourth Ordinary Meeting, Tuesday, 20th February, 1894.

The President in the Chair.

The following were elected Fellows:—

Charles E. Adams, B.Sc.	|	Rowland H. Fellows.
George E. Cockram.	|	George H. Perris.
William F. Drew.	|	James Price.

Mr. George Johnson, Statistician of the Department of Agriculture, Canada, was elected an Honorary Fellow of the Society.

The Right Hon. Lord George Hamilton, M.P., read a Paper on "Ocean Highways: their bearing on the Food and Wages of Great Britain."

In the discussion which followed, the undermentioned took part:—The President (Mr. Charles Booth), Sir John C. R. Colomb, Sir Rawson W. Rawson, Mr. John Glover, Mr. H. O. Arnold-Forster, M.P., Mr. Stephen Bourne, Mr. W. J. Harris, Mr. A. E. Bateman, and Lord George Hamilton in reply.

Fifth Ordinary Meeting, Tuesday, 20th March, 1894.

Sir RAWSON W. RAWSON, K.C.M.G., C.B., Hon. Vice-President, in the Chair.

The following were elected Fellows:—

John William Field.
Joseph Francis.

Arthur John Hughes, C.I.E.
Hon. William F. D. Smith, M.P.

The President (Mr. Charles Booth) read a Paper on "Statistics of Pauperism in Old Age."

In the discussion which followed, the undermentioned took part:—Sir Francis S. Powell, M.P., Mr. C. S. Loch, Sir Courtenay Boyle, Dr. W. A. Hunter, M.P., Rev. J. Frome Wilkinson, Mr. G. H. Perris, and Mr. Charles Booth in reply.

Sixth Ordinary Meeting, Tuesday, 17th April, 1894.

Dr. FREDERIC J. MOUAT, LL.D., Hon. Vice-President, in the Chair.

The following were elected Fellows:—

William M. Kirkcaldy.

William Lewis Newey.

Mr. J. A. Baines, C.S.I., read a Paper on "The Conditions and Prospects of Popular Education in India."

In the discussion which followed, the undermentioned took part:—Mr. Rowland Hamilton, Sir Juland Danvers, Mr. F. C. Danvers, Mr. A. K. Connell, Dr. F. J. Mouat (Chairman), and Mr. Baines in reply.

Seventh Ordinary Meeting, Tuesday, 22nd May, 1894.

Sir RAWSON W. RAWSON, K.C.M.G., C.B., Hon. Vice-President, in the Chair.

The following was elected a Fellow:—

Geoffrey Drage, M.A.

Mr. Robert M. Johnston, F.L.S., Government Statistician and Registrar-General of Tasmania, was elected an Honorary Fellow of the Society.

Mr. John Macdonell, LL.D., read a Paper on "Statistics of Litigation in England and Wales since 1859."

In the discussion which followed, the undermentioned took part:—Sir Rawson W. Rawson (Chairman), Mr. H. Cunynghame, Dr. Robert Giffen, Mr. John Glover, Mr. W. J. R. Pochin, Mr. F. Hendriks, and Mr. J. Macdonell in reply.

Eighth Ordinary Meeting, Tuesday, 19th June, 1894.

Sir RAWSON W. RAWSON, K.C.M.G., C.B., Hon. Vice-President, in the Chair.

The following were elected Fellows:—

Arthur Lyon Bowley.	George Jamieson.
Noel Charles Minchin Home, LL.B., A.I.A.	Captain Christopher T. P. Keene.
Sir William H. Houldsworth, Bart., M.P.	James Barr Robertson.
	Napoleone Tagliaferro.
	Frederick William Verney.

Mr. William J. Harris read a Paper on "A Comparison of the Growth of Wealth in France and England, also of their Economic Conditions, specially with reference to their Agricultural Systems, and their Position in case of War."

In the discussion which followed, the undermentioned took part:—Sir Rawson W. Rawson (Chairman), Mr. S. Bourne, Mr. Rowland Hamilton, Mr. F. Hendriks, Major P. G. Craigie, Mr. G. Samuel, Mr. Clare S. Read, Mr. John B. Martin, and Mr. Harris in reply.

Notwithstanding the decrease in the number of Fellows as compared with last year, and the falling off in the ordinary income thus arising, the Council have been able to defray the expenses of the year, including the extraordinary outlay for legal

charges in connection with the appointment of new Trustees, the purchase of a set of the Journal, and the painting and repair of the Society's premises, without touching on the Society's capital. As far as can be foreseen, no heavy expenses are likely to arise during the present year, so that the current income is estimated to meet the ordinary requirements of the Society. In view of the fact that the constantly increasing Library will, in all probability, require in the future a larger sum to maintain it in proper condition, the Council would specially invite individual Fellows to help in maintaining the numbers of the Society.

The Council in February last appointed a special committee to take such steps as they might consider necessary to give effect to the views the Society has expressed on previous occasions with regard to :—

- (a.) The maintenance of a permanent census organisation.
- (b.) The institution of a quinquennial census.

The committee, after due deliberation, drew up and forwarded a memorial¹ to the President of the Local Government Board, in support of the recommendations made by the Departmental Committee of the House of Commons in 1890. A copy of this memorial was sent to every Member of Parliament who was a Fellow of the Society, asking him to do anything in his power in support of the objects indicated. A letter was also addressed to Mr. Shaw-Lefevre asking him to receive a small deputation on the subject.

This deputation, consisting of the President, Sir Rawson W. Rawson, Mr. John B. Martin, Dr. G. B. Longstaff, and Mr. Hendriks, and introduced by the Right Hon. Leonard Courtney, M.P., waited on the President of the Local Government Board at the House of Commons on the 5th June, when Mr. Shaw-Lefevre expressed his sympathy with the objects of the deputation, promising to consider the matter very carefully, and, if he could make out a sufficiently strong case to the Treasury, to press the suggestions of the memorialists with all the means at his command.

Under the conditions in the regulations laid down for the award of the Guy Medal, the Council have awarded a silver Guy Medal to Mr. Augustus Sauerbeck, for his paper, read in April, 1893, on "Prices of Commodities during the last seven years," taking this opportunity of recognising the valuable series of

¹ This memorial will be found printed in the Society's Journal for June last, p. 379.

articles which Mr. Sauerbeck has from time to time contributed to the Society's Journal.

With the view of providing in advance suitable papers for discussion at the evening meetings of the Society, the Council in November appointed a Sub-Committee on Papers, whose special functions should be to suggest a sufficient number of subjects which might be treated statistically, in order to provide against any unforeseen difficulty that might occur.

The Howard Medal for 1893 was awarded (together with 20*l.*) to Dr. Hugh R. Jones, M.A., for his essay on "Perils and Protection of Infant Life, with statistical illustrations where practicable." The essay was read before the Society in December, and is printed in the Journal for March.

The subject of the essays for the Howard Medal, which will be awarded in 1895 (with 20*l.* as heretofore), is as follows:—

"Reformatories, and Industrial Schools of that class, in their relation to the antecedents, crimes, punishments, education after conviction, and training of juvenile offenders: together with the nature and extent of their influence on the diminution or increase of crime generally.

"These particulars to be collected and analysed on a statistical basis, both as respects the institutions and agencies, public and private, at home and abroad, for the reclamation of juvenile offenders, and the best means of dealing with them on release.

"This does not include the industrial and training institutions certified by the Local Government Board under the 25 and 26 Vict., cap. 43."

By permission of the Council, a preliminary conference was held in the Society rooms on the 16th March, for the purpose of considering the advisability of forming an industrial union of employers and employed for the discussion of questions affecting both parties.

The meeting of the International Statistical Institute at Chicago in September last year, was attended by three Fellows of the Society, viz.: Mr. A. E. Bateman, C.M.G., Major P. G. Craigie, and Mr. F. Hendriks. There were also present the following Honorary Fellows of the Society: General F. A. Walker, who was elected "President-Adjoint" of the Institute, the Hon. Carroll D. Wright, M. E. Levasseur, Signor L. Bodio, and M. A. N. Kiær. The proceedings of the Institute have been noticed in the Journal for March.

The meeting of the British Association was held last year at Nottingham, Section F being under the presidency of Professor J. S. Nicholson, F.S.S. Papers were read by the following Fellows of the Society:—Mr. Stephen Bourne, Mr. Edwin Cannan, M.A., the Rev. W. Cunningham, M.A., D.D., Professor F. Y. Edgeworth, M.A., D.C.L., Professor H. S. Foxwell, M.A., Mr. L. L. Price, M.A., and the Rev. J. Frome Wilkinson, M.A.

The cordial thanks of the Council have been tendered on behalf of the Society to the Auditors for their honorary services in auditing the Treasurer's account for the past year.

Permission to hold the Ordinary Meetings of the Society in the Theatre of the Museum of Practical Geology, in Jermyn Street, has been continued through the courtesy of the Education Department, and the Council have again conveyed to the Lords of the Committee of Council on Education their thanks for the accommodation thus afforded.

The following list of Fellows proposed as President, Council, and Officers of the Society for the Session 1894-95 is submitted for the consideration of the meeting:—

COUNCIL AND OFFICERS FOR 1894-95.

PRESIDENT.

*THE RIGHT HON. LORD FARRER.

COUNCIL.

Arthur H. Bailey, F.I.A.	Frederick Hendriks, F.I.A.
Alfred Edmund Bateman, C.M.G.	Noel A. Humphreys.
Henry R. Beeton.	Charles S. Loch, B.A.
James Bonar, M.A., LL.D.	Geo. B. Longstaff, M.A., M.D., F.R.C.P.
Stephen Bourne.	John Biddulph Martin, M.A.
*Sir Courtenay Boyle, K.C.B.	Richard Biddulph Martin, M.A., M.P.
J. Oldfield Chadwick.	*Alfred Milner, C.B., M.A.
Hyde Clarke.	Francis G. P. Neison, F.I.A.
Major Patrick George Craigie.	*William Ogle, M.A., M.D., F.R.C.P.
Frederick C. Danvers.	The Right Hon. the Earl of Onslow, G.C.M.G.
Frederick Brooksbank Garnett, C.B.	Thomas J. Pittar.
*John Glover, J.P.	Sir William C. Plowden, K.C.S.I.
Viscount Grimston.	Richard Price-Williams, M.Inst.C.E.
*The Right Hon. Lord George F. Hamilton, M.P.	John Rae, M.A.
Rowland Hamilton.	*Robert A. Yerburch, M.P.

Those marked * are new Members of Council.

TREASURER.

Richard Biddulph Martin, M.A., M.P.

HONORARY SECRETARIES.

John Biddulph Martin, M.A. | Alfred Edmund Bateman, C.M.G.
Major Patrick George Craigie.

FOREIGN HONORARY SECRETARY.

John Biddulph Martin, M.A.

The abstract of receipts and payments, and the balance sheet of assets and liabilities on 31st December, 1893, are subjoined, together with the report of the Auditors on the accounts for the year 1893:—

(I.)—ABSTRACT of RECEIPTS and PAYMENTS for the YEAR ending
31st DECEMBER, 1893.

RECEIPTS.		PAYMENTS.	
	£ s. d.		£ s. d.
Balance in Bank, 31st December, 1892 ...	£474 6 1	Rent	£312 2 9
		Less sublet	37 10 -
Balance of Petty Cash.	29 6 3		274 12 9
" Postage Account }	4 17 -	Rates and Taxes	37 16 9
	508 9 4	Fire, Lights, and Water	43 11 10
Dividends on 2,900 <i>l.</i> Consols.....	77 12 -	Repairs, Furniture, &c.....	45 3 -
Annual Subscriptions:—		Salaries, Wages, and Pension ...	550 - -
45 Arrears	£94 10 -	Journal, Printing.....	£524 7 2
680 for the year } 1893	1,428 - -	" Shorthand } Reporters }	37 13 -
18 in Advance	37 16 -	" Literary } Services }	16 9 6
	1,560 6 -		578 9 8
743		Ordinary Meeting Expenses	31 15 10
6 Compositions.....	123 18 -	Advertising	52 11 -
Journal Sales	127 16 2	Postage and delivery of Journals..	72 5 7
Advertisements in Journal	14 3 6	Stationery and Sundry Printing...	73 6 11
		Library.....	62 16 6
Total.....	£2,412 5 -	Guy Medal	1 10 -
		Howard Medal	20 17 6
		Incidental Expenses	75 14 4
			1,920 11 8
		Balance per Bank } Book	£452 18 8
		Balance of Petty Cash	35 6 3
		" Postage } Account	3 8 5
			491 13 4
		Total	£2,412 5 -

(Signed)

“ J. O. CHADWICK, F.C.A.,
“ SAM. DYER NIX, F.C.A.,
“ A. K. CONNELL, } *Auditors.*”

“ 7th February, 1894.

“REPORT OF THE AUDITORS FOR 1893.

“*The Auditors appointed to examine the Treasurer’s Accounts of the Society for the Year 1893,*

“REPORT:—

“*That they have compared the Entries in the Books with the several Vouchers for the same, from the 1st January to the 31st December, 1893, and find them correct, showing the Receipts (including a Balance of 508l. 9s. 4d., from 1892) to have been 2,412l. 5s. -d., and the Payments 1,920l. 11s. 8d., leaving a Balance in favour of the Society of 491l. 13s. 4d. at the 31st December, 1893.*

“*They have also had laid before them an Estimate of the Assets and Liabilities of the Society at the same date, the former amounting to 7,035l. 4s. 7d., and the latter to 246l. 4s. 8d., leaving a Balance in favour of the Society of 6,788l. 19s. 11d., exclusive of the present value of the absolute Reversionary Interest bequeathed to the Society by the late Dr. Guy.*

“*The amount standing to the credit of the Building Fund at the end of the year 1893, was 257l. 13s. 1d., of which 243l. 16s. 4d. was invested in 232l. -s. 5d. Metropolitan Three and a Half per Cent. Stock, in the name of the Treasurer, R. B. Martin, Esq., M.P., thus leaving a balance of 13l. 16s. 9d. to be invested.*

“*They have verified the Investments of the Society’s General Funds and Building Fund, and also the Banker’s Balance, all which were found correct.*

“*They further find that at the end of the year 1892 the number of Fellows on the list was 994, which number was diminished in the course of the year to the extent of 66, by Deaths, Resignations, and Defaulters, and that 35 new Fellows were elected (and the Resignation of one Fellow was cancelled), leaving on the list on the 31st December, 1893, 964 Fellows of the Society.*

(Signed)	“ J. O. CHADWICK, F.C.A.,	} Auditors.”
	“ SAM. DYER NIX, F.C.A.,	
	“ A. K. CONNELL,	

“7th February, 1894.

PROCEEDINGS of the SIXTIETH ANNUAL GENERAL MEETING.

The PRESIDENT, CHARLES BOOTH, ESQ., in the Chair.

MR. JOHN B. MARTIN (HONORARY SECRETARY) read the circular convening the meeting.

The minutes of the last ordinary meeting were read and confirmed.

The Report of the Council was taken as read.

The PRESIDENT moved: "That the Report of the Council, the Abstract of Receipts and Payments, the Balance Sheet of Assets and Liabilities, and the Report of the Auditors for 1893 be entered on the Minutes, and printed in the Journal."

Dr. F. J. MOUAT seconded the motion, which was carried unanimously.

Mr. THOMAS TYRER and Mr. JESSE ARGYLE having been appointed Scrutineers of the Ballot, reported that the proposed list of Council and Officers for the ensuing session was unanimously adopted. The thanks of the meeting were, on the motion of the President, conveyed to the Scrutineers.

The PRESIDENT, in handing a Silver Guy Medal to Mr. AUGUSTUS SAUERBECK, said that this medal had been awarded in recognition of the great value of the statistics which Mr. Sauerbeck had furnished to the Society. These statistics were of that patient, consistent, and continuous kind whose value could scarcely be exaggerated. Mr. Sauerbeck had pursued his investigations, not once for all, but year after year, and so had contributed to the proceedings of the Society a mass of valuable and material information. He had therefore the greatest possible pleasure in presenting this silver medal which the Society felt was but the just recognition of his services.

Mr. SAUERBECK tendered his sincere thanks for the honour conferred upon him, and expressed his surprise at the award as he had during only a few years been a Fellow of the Society. He had however long taken an active part in the study of statistics, particularly of trade, of prices, and the movements of the production of commodities generally. When, towards the end of the seventies, currency questions and the fall in prices began to attract general attention, he made a special study of this subject, and not finding the material as complete or reliable as it should have been, he had commenced the tables published in the Journal. His chief purpose was to collect reliable data for economists who were best able to judge of the results, and it had been a great satisfaction to him to find that they were so favourably received. The medal just

awarded would operate as a great stimulus to him to continue the work.

The PRESIDENT formally announced the subject of the essays for the Howard Medal for 1895 (see p. 444).

Mr. JOHN GLOVER moved a cordial vote of thanks to the President, Council and Officers for their services during the past session.

Mr. JOSEPH SPRIGGS seconded the resolution, which was carried unanimously.

STATISTICS of LITIGATION in ENGLAND and WALES since 1859.
By JOHN MACDONELL, ESQ., LL.D., a Master of the Supreme Court.

[Read before the Royal Statistical Society, 22nd May, 1894.

Sir RAWSON W. RAWSON, K.C.M.G., C.B., Hon. Vice-President, in the Chair.]

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I.—*Objects of the Paper.*

THE statistics of crime have received far more attention, they have been studied with greater care, and reduced to much better order, than the statistics of civil litigation.¹ This holds good of the statistics of most countries; it is especially true of those of England; and this circumstance is the reason and explanation of this paper. I propose attempting four things which may a little help to improve the form of civil, as distinguished from criminal, judicial statistics—four things all very obvious, but, so far as I know, not yet attempted:—

(a.) To measure the contentious business of each of the courts of justice in England and Wales, and to mark the variations from year to year.

(b.) To measure the annual amount of litigation of the country.

(c.) To note the variations in appellate, as distinguished from what may be termed original, litigation.

(d.) To point out a few defects in existing statistics; to suggest a few alterations, and to show how the English returns might be prepared, so as, in point of completeness and orderly arrangement,

¹ See Oettingen's "Moralstatistik," 743; Yvernès, "L'Administration de la Justice Civile et Commerciale en Europe," xvii.

to facilitate comparison with those of France, Germany, and Italy, the three countries now possessing the best systems of legal statistics.

I desire to refer incidentally to the cost of litigation, and the number of counsel and solicitors who carry on the contentious legal work of the country; but the chief purpose of the paper is to measure the volume of litigation from 1859 to 1892.

Continued from year to year, such information would be instructive not only to the law reformer, but to the student of moral statistics. It might correct hasty conclusions based upon statistics of crime. We should not see writers reasoning from official returns as to crime, without taking into account the figures as to contentious legal business; reasoning, for example, about the decrease or increase of crimes of violence, without consulting the statistics of actions for assault and trespass, or ignoring the returns of the Divorce Court in speculating as to the variations in certain offences. This information would help to solve the problem, often touched upon by jurists, profoundly important to the whole community, and hitherto curiously neglected by statisticians, whether litigation is diminishing in modern times; and I am persuaded that it would show that many moral phenomena, apparently independent and unconnected, obey the same laws.

II.—*Measure of Volume of Litigation.*

The simplest and best test of the amount of litigation is the number of writs or plaints. True, the issuing of a writ may be, and often is, followed by no other proceedings; it may resemble a gun fired across the bows of a vessel; the charge may be a blank cartridge, the writ a mere menace. In point of fact, in the Central Office there is an appearance only in about 60 per cent. of the writs issued, and in actions begun in district registries the percentage of appearances is lower than in London. In about 3 per cent. only do the cases come to adjudication by judge or jury. Thus in 1892, while the writs issued at the Central Office were 46,234, there were only 28,486 appearances; though 75,458 writs were issued in that year at the Central Office and in the district registries, the actual trials in Middlesex and London and at the Assizes were only 2,401.

A further circumstance must be borne in mind: an originating summons is equivalent to a writ; and in the Chancery Division is much business—partly litigious, partly administrative—of which the number of writs gives no certain indication. Another test is the number of judgments; a third the number of executions. On the whole, however, the fairest test is the number of writs issued; appearances, trials, judgments, executions, and all other steps in

an action will be found to vary roughly with the number of writs. Roughly, not exactly. Deviations from this rule, especially in regard to appearances, will be found in certain years; indeed, it seems to be a principle that in years in which an unusually large number of writs is issued, they are followed by a much smaller percentage of appearances, trials, judgments, and executions than in other years.

From the tables which follow, the returns as to bankruptcy proceedings have been excluded, and the propriety of this omission may be challenged. A bankruptcy notice or motion is often the beginning of litigious proceedings. It is often a mode of determining a dispute or group of disputes. Indeed it may be an accident whether a disputed claim is determined by an action or a motion in bankruptcy; and bankruptcy business occupies no small part of the time of the courts. On the whole, however, it seems expedient to exclude from the present paper the bankruptcy figures. They merit consideration by themselves. They relate largely to matters of administration. The many changes in the bankruptcy law render accurate comparisons difficult; and, what is a decisive consideration, they are annually subjected in the Comptroller General's reports to an elaborate analysis. The proceedings of the Judicial Committee of the Privy Council, for the most part relating to appeals from our colonies and dependencies, have been excluded. With some doubts I have included the business of the probate, divorce, and ecclesiastical courts, though they have jurisdiction over matters altogether different from those coming before other courts. The exact limits of the inquiry are not easily defined. Much of the business of courts of law is of an automatic or involuntary character, involving, only accidentally, the settlement of disputes; much of it is purely administrative; and I am by no means certain that I have separated accurately the litigious from the non-litigious business. It is probable, however, that the elements wrongly excluded or included would not appreciably affect the results.

For several reasons I begin with 1859. The period which has since elapsed has witnessed the carrying out of several great changes in procedure—notably the Common Law Procedure Acts, several Acts extending or modifying the County Court Jurisdiction (30 and 31 Vict., cap. 142, 1867; 31 and 32 Vict., cap. 71, 1868, and 51 and 52 Vict., cap. 43, 1888), and the Judicature Acts. Before 1859 returns are occasional and defective. Hereafter the inquiry may be carried still further back, certainly the history of English law will be incomplete until the volume of business in our courts from time to time is known.

III.—*Business of Queen's Bench Division.*

The first table shows the average number of writs, appearances, and judgments from 1859 to 1892. Appended is the amount of the population at each decade. It will be noted that the returns of the writs, appearances, judgments, and executions before 1876 are those of the three Common Law Courts. The figures for 1876 and subsequent years in the first table exclude the returns of the district registries, and include only the returns in London.

TABLE 1.—*Writs Issued, Appearances, Judgments, and Executions.*

	Writs.	Appearances.	Judgments.	Executions.	Population.
1891-92.....	45,508	28,456	22,735	10,798	(1891) 29,001,018
'87-90.....	44,439	27,598	22,456	13,310	
'83-86.....	49,225	29,914	24,461	15,737	
'79-82.....	56,126	29,500	24,389	16,483	(1881) 25,974,439
'75-78.....	57,739	24,845	22,916	14,274	
'71-74.....	66,301	22,756	24,292	15,471	
'67-70.....	91,134	29,517	32,485	23,449	(1871) 22,712,266
'63-66.....	116,364	32,321	38,266	26,716	
'59-62.....	100,426*	26,522	36,114	26,223	(1861) 20,066,224
Decrease or increase between 1859-62 and 1891-92	Per cnt. - 54·6	Per cnt. + 7·3	Per cnt. - 37·04	Per cnt. - 50·9	Per cnt. + 44·02

* Renewals appear to have been included for some years in the returns of writs of the Exchequer Court ("Judicial Statistics, 1873," p. iii). Several discrepancies, it may here be observed, are to be found in the returns. They do not, however, appear to affect to any appreciable extent the results.

The second table, supplying the omission in the first, shows the average number of writs, appearances, judgments, and executions (inclusive of the returns of the district registries).

TABLE 2.—*Writs Issued, Appearances, Judgments, and Executions (including District Registries).*

	Writs.	Appearances.	Judgments.	Executions.	Population.
1891-92.....	73,235	35,453	32,470	13,260	(1891) 29,001,018
'87-90.....	72,119	34,904	32,368	19,147	
'83-86.....	78,387	37,342	34,475	21,877	(1881) 25,974,439
'79-82.....	89,396	37,373	35,285	23,644	
'75-78.....	83,620	30,075	31,082	24,806	(1871) 22,712,266
Decrease or increase....	Per cnt. - 12·4	Per cnt. + 17·8	Per cnt. - 4·4	Per cnt. - 34·4	Per cnt. + 27·7
Decrease or increase between 1859-62 and 1891-92	- 27·07	+ 33·7	- 10·01	- 38	+ 44·02

These tables become more instructive if they are read in the light of another, which is in the main compiled from the reports of the Common Law Commissioners.

TABLE 3.—*Writs in Common Law Courts, 1823-56.*

	Writs in Queen's Bench, Common Pleas, and Exchequer.	Population.
1856.....	76,879	(1851) 17,927,609
'55.....	73,783	
'54.....	71,319	
'53.....	65,447	
'52.....	69,120	
'51.....	72,514	(1841) 15,914,148
'49.....	84,860	
'48.....	91,630	
'47.....	97,274	
'46.....	129,499	
'36.....	95,964	(1831) 13,896,797
'34.....	95,356	
'33.....	83,787	
'30.....	96,595	
'23-27 (average)*	79,693	
Decrease or increase } between 1823-27 } and 1892..... }	Per cent. - 8'07	Per cent. + 28'9

* "Appendix to First Report of Commissioners on Common Law," p. 156.

The above figures are chiefly taken from Parliamentary Paper, 1854 (364). The following figures are given in the "Report of Commission on Judicial Business, 1857:"—

1852	60,582	1848.....	81,292
'51	56,100	'47.....	85,327
'50	63,095	'46.....	116,941
'49	73,151		

In addition to the three Courts of Common Law at Westminster there were in 1823-27 several courts having jurisdiction unlimited as to amount. Two of them were the Courts of Common Pleas of the County Palatine of Lancaster, and the Court of Pleas of the County Palatine of Durham, in both of which sat Judges of the Courts of Westminster under Commissions from the Crown. In the Court of Great Sessions at Chester also sat two judges, one appointed under one commission to be his or her Majesty's Justice for the counties of Chester and Flint, and under another commission to be Justice for the counties of Montgomery and Denbigh. The second judge was appointed under a single com-

mission to be Justice for all these counties. ("First Report of Commissioners of Common Law," p. 34.) There was also the Court of Great Sessions in Wales, dating from the time of Henry VIII (27th Henry VIII, cap. 26), and possessing an equitable as well as common law jurisdiction. The following table shows the business in the superior Courts of Common Law at Westminster and in the Courts of the Counties Palatine and in the Great Sessions in Wales in 1823-27:—²

TABLE 4.—*Actions Brought and Appearances, 1823-27.*

	Actions Brought.	Appearances.
1827.....	101,133	29,710
'26.....	108,548	27,626
'25.....	82,385	21,797
'24.....	71,132	19,919
'23.....	68,198	19,852
Average	86,279	23,781
Decrease or increase between 1823-27 and 1891-92	Per cent. -16·3	Per cent. +48·9

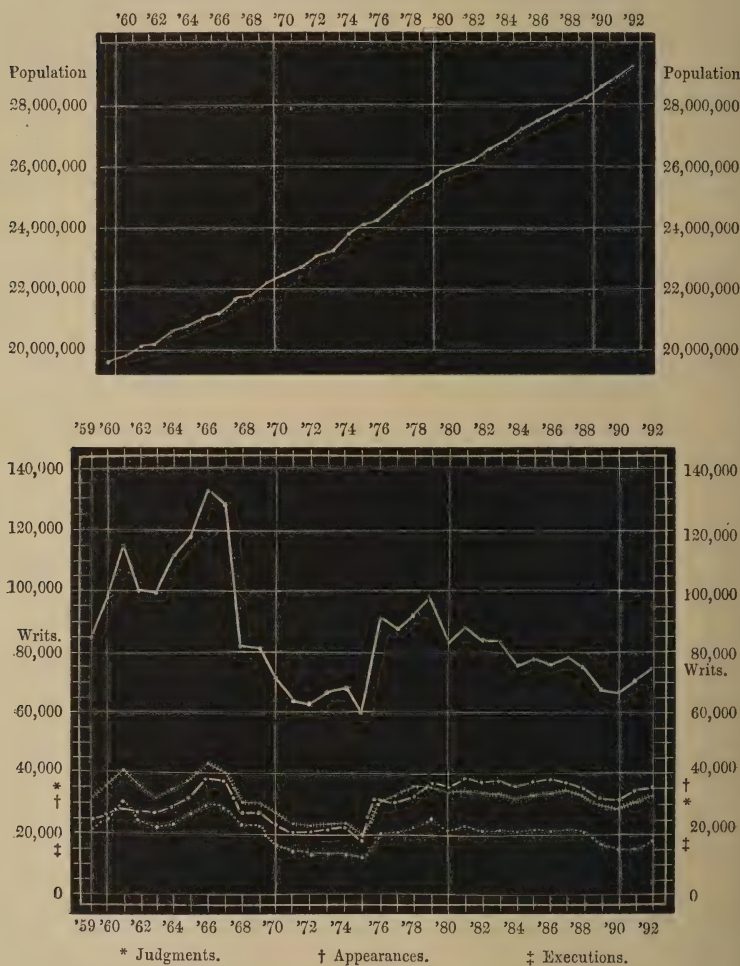
The accompanying sketch (see next page) will help one to understand the fluctuations in litigation since 1859.

Pausing to consider the purport and outcome of these returns, one is struck by some conclusions:—

(a.) A great decrease in process issued in the Common Law Superior Courts. The mean number of writs in 1891-92 was 73,235; in 1859-62, 100,426; in 1830, 96,595; in 1827, 101,133. In other words, there was in about sixty-five years a diminution of 27 per cent. The maximum number of writs in the period over which the returns extend was 133,160 issued in 1866, which was nearly 82 per cent. greater than in 1891-92. The minimum number was 60,062 in 1875, that is, less than half the number in 1866. Bearing in mind the rapid increase of population, the decrease is remarkable. Had the writs increased at the same rate as the population since 1866, there would have been in 1891 not 71,012, but more than double that number of writs. To put the matter shortly: in 1830 1 writ was issued in the Common Law superior courts for every 144 inhabitants; in 1851, 1 for every 247; in 1861, 1 for every 176; in 1871, 1 for every 348; in 1881, 1 for every 294; in 1891, 1 for every 408. What will be the number of writs in the Queen's Bench Division twenty-five years hence if this rate of diminution goes on?

² Welsh judicature abolished by 11 Geo. IV and 1 Will. IV, c. 170.

Business of Queen's Bench Division from 1859 to 1892.



The test of wealth is not so easy to apply. Taking as a rough criterion the assessment of profits of trade under Schedule D, we find that in England in 1858-59 the total sum was 73,444,000*l.*, and in 1891-92 it was 163,577,031*l.* (net profits 127,801,041*l.*); that is to say, wealth had, according to this very imperfect test, about doubled. According to Dr. Giffen, capital increased 35 per cent. between 1865 and 1875, and 15 per cent. between 1875 and 1885. Obviously litigation, measured by the number of writs, has not kept pace with this increase. A reduction of no less than 43 per cent. took place between 1863-66 and 1871-74. This is not entirely explained by any transferences to the County Courts.

(b.) Appearances have not diminished in the same degree as writs. In fact, the appearances in 1891-92 (35,453) were more than those in 1859-62 (26,522) and those for 1827 (29,710). The largest number was 38,410, in 1866, the smallest, 20,461, in 1875.

(c.) Judgments have diminished, but not in the same degree as writs; between 1859-62 and 1891-92 they have been reduced by more than 10 per cent.

(d.) Executions have diminished 38 per cent. between 1859-62 and 1891-92; there were in 1859-62 13 executions for every 18 judgments, and in 1891-92 only 1 in 2.

The maximum number of writs is issued in June, July, and November, the minimum in August and September. It is apt to be supposed that during the Long Vacation the courts are completely closed. The fact is that the Long Vacation does not make very much difference as to certain matters: the difference between the maximum and minimum of writs rarely much exceeding 1,500. The following is a statement for five years of writs and originating summonses issued at the Central Office from quarter to quarter:—

TABLE 5.—*Percentages of Writs and Originating Summonses, 1888-92.*

	1888.	1889.	1890.	1891.	1892.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
First quarter	26·2	25·4	25·35	24·07	25·4
Second „	26·2	25·6	25·52	25·7	25·09
Third „	22·5	23·2	23·48	24·02	23·3
Fourth „	25·0	25·8	25·6	26·2	26·1

In 1889, 1890, 1891, 1892, the judgments signed in the quarter in which falls the Long Vacation were respectively 22, 22·2, 22·7, and 22 per cent. of the entire number of judgments.

Many persons, including, it may be, some lawyers, are apt to assume that actions are, as a rule, actually decided in open court, and that the majority of judgments are the results of discussions, arguments, and judicial decision. Nothing could be further from the truth. Very many actions never come to the point of appearance; many are brought to an end by default in delivering defence; many others are terminated by orders to dismiss for want of prosecution. Only an insignificant minority reaches the stage of trial, as will be apparent from the next table, which shows the average number of cases entered and tried (defended and undefended), with the amount recovered in Middlesex and London.

TABLE 6.—*Cases Entered and Tried and Amounts Recovered.**

	Entered.	Tried.	Recovered.	Population.
1891-92.....	2,604	1,544	635,774	(1891) 29,001,018
'87-90.....	2,439	1,269	287,628	
'83-86.....	2,397	1,281	268,913	('81) 25,974,439
'79-82.....	2,285	1,126	200,380	
'75-78.....	2,183	1,053	169,896	('71) 22,712,266
'71-74.....	2,328	1,166	192,865	('61) 20,666,224
'67-70.....	2,814	1,398	229,713	
'63-66.....	2,770	1,286	196,212	('51) 17,927,609
'59-62.....	2,215	1,163	134,169	('41) 15,914,148
'45-56.....	2,679	1,249	....	( '31) 13,896,797
'23-27.....	3,198	....	....	( '21) 12,000,236
Decrease or increase } per cent.	-18.5	+23.62	+373.8	+141.6

* In the figures as to amounts recovered are several discrepancies. The figures in Mr. Fowler's returns do not agree with those in the Judicial Statistics.

Here the figures are much more favourable than those in Tables 1 to 4. Still, on the whole, they show no increase corresponding to that of the population and wealth of the country. In 1823-27 the population was 12,000,000 to 13,000,000, and the average cases entered for trial in the Superior Courts of Common Law were 3,198, or 1 to every 3,700 to 4,000 inhabitants; in 1891 they were 1 to every 11,266. In 1827 the causes actually entered at Westminster and in London were 4,375; given the same rate of increase as that of population, the causes entered would not be about 2,500, but more than twice as many.

But in interpreting these figures three facts are to be remembered: In the first place, the proportion of cases tried to cases entered was not so large as it now is. In Brougham's speech on Legal Reform in 1828, when the entries were about 3,000, he speaks of 700 or 800 cases to be tried.³ In the second place, many of the trials in early times were mere formalities: it was

³ "Speeches," 2, p. 336. He remarks that "in the time of Lord Mansfield, "in the late reign, 60 was reckoned a fair entry." But *quære*, in Burrow's Reports, preface, vol. i, p. iv, it is said, "some hundred causes end every year at "the sittings."

necessary to go to trial when there was nothing to be determined. In the third place, a verdict subject to reference was much commoner than it is. The Court merely decided that the question should be elsewhere and otherwise decided.⁴

No small proportion of the writs is in respect of bills of exchange. Now, until the 18th and 19th Vict., cap. 67, was passed, it might be necessary, no matter how flimsy might be the defence, to obtain a verdict. That statute—replaced by the procedure under Order XIV—brought to a speedy close actions which would in other days have swelled the list of cases entered if not tried. And now a very large and increasing number of actions on contracts and claims for liquidated amounts are disposed of without trial and by summary judgment under Order XIV; which has proved in many ways a most successful innovation in legal procedure, and the utility of which appears by the following statement:—

TABLE 7.—*Average Summary Judgments under Order XIV.*

1892	6,377
'88-91	5,809
'84-87	6,076
'80-83	5,654
'76-79	3,353
<hr/>	
Increase	+ 90·18 per cent.

To these figures must be added the judgments signed in the district registries under Order XIV; in 1876 they were 809, in 1892, 1,270. For the information of those who are apt to think that most cases are decided by judge or jury in open court, it may be stated that, in round figures, of the whole number of judgments signed at the Central Office in 1892 (23,332), nearly one-third were obtained under Order XIV; and that for one judgment given for the plaintiff on verdict in open court, about four or five were given in chambers on affidavits.

In London and Middlesex the amount recovered by verdicts in 1892 was 318,979*l.*; that recovered in 1891 was 952,570*l.*, the largest sum recovered within the above years. I am inclined to think that this increase is indicative of a disposition on the part of juries to give larger verdicts. Thirty years ago verdicts for 1,000*l.* or 1,500*l.* were much rarer than they are now. At the same time the whole amount recovered is not equal to the sums

⁴ "A cause paper in the present day numerically the same as one of former times, in reality represents a mass of contentious business of far more intricacy and importance."—"Report of Common Law (Judicial Business) Commission, 1857," p. x. Here may be cited Brougham's speech on the state of the law, 7th February, 1828, "the judges do not sit for more than an hour some mornings, and there are hardly ever in the paper more than six or seven causes for trial after term."

which a single Parliamentary Committee has been known to deal with in one Bill. Excluding the exceptional figures for 1891, the average sum recovered in 1887-90 was 287,628*l*.

There remains the fact that, while population has increased 50 per cent., the number of cases entered remains much the same, and is in fact less than it was in 1867-70, when the population of England and Wales was about 8,000,000 less than it is. Three or four judges trying on an average three cases a day would dispose of the lists in a working year of about two hundred days.

Two or three circumstances connected with the returns, as to entries and trials, may be here noticed. The percentage of cases actually tried to cases entered is higher than it was, at all events in London.

The proportion of cases tried to cases entered (London, Middlesex and Assizes):—

TABLE 8.

	London, &c.	Circuit.
1891-92 =	59·2	65·8
'87-90 =	52·0	61·2
'83-86 =	54·3	65·2
'79-82 =	49·2	67·2
'75-78 =	48·2	64·4
'71-74 =	50·1	66·1
'67-70 =	49·7	68·4
'63-67 =	46·4	72·1
'59-62 =	52·5	75·3
Increase or decrease	+ 6·7	— 9·5

The contrast between the town and circuit business will not escape notice. It will be a surprise to many to find that, notwithstanding the well known temptations on circuit to settle cases before trial, the percentage of trials to entries is larger than in London.

The next table shows the proportion of cases tried to the total number of writs issued:—

TABLE 9.—*Percentage of Cases Tried to Total Writs.*

1892 3·2	1879 1·9	1866 1·1
'91 3·2	'78 2·3	'65 1·1
'90 2·8	'77 2·1	'64 1·9
'89 2·8	'76 2·8	'63 2·1
'88 3·0	'75 2·5	'62 2·1
'87 2·5	'74 2·6	'61 1·9
'86 2·8	'73 2·9	'60 2·1
'85 2·6	'72 2·6	'59 2·4
'84 2·7	'71 2·5	
'83 2·5	'70 2·5	
'82 2·3	'69 2·8	
'81 2·2	'68 2·9	
'80 2·1	'67 2·1	
		Decrease between 1859 and 1892 } + 0·8

It will be noted that the years in which the largest number of writs were issued—1864, 1865, 1866—were those in which the percentage of trials was small; and this is in harmony with the fact that the proportion of defended actions is increasing. Much is said about the lists of actions being “hollow” or “melting away.” This is not true to the degree which it once was, for more cases entered for trial are actually defended; the percentage of such was 84·1 in 1859-62, but it rose in 1891-92 to 92·3.

TABLE 10.—*Undefended Cases.*

[Percentage of cases tried which are undefended.]

1891-92	6·7	1867-70	23·7
'87-90	9·5	'63-66	21·2
'83-86	10·05	'79-82	15·9
'79-82	9·8		
'75-78	10·9	Decrease	— 9·2
'71-74	17·1		

It may be observed that the years with highest average of defended actions were 1887-90 and 1891-92, those with lowest 1867-70. In 1836, out of 1,088 cases tried in London and Middlesex, 250, or about one-fifth, were undefended; in 1849, out of 482 tried in the Exchequer Court, 164, or about one-third, were undefended. In 1890, only 80 out of 1,194 cases tried, or about one-fifteenth; in 1891, only 113 out of 1,517, or about one-thirteenth; in 1892, 96 out of 1,571 were undefended.

I am inclined to think that the increase in the percentage of actions actually tried and of those defended as distinguished from undefended actions, shows that now-a-days litigation has to do more than it once had with substantial disputes, and that cases are sifted more carefully in the early stages than they once were. This statement is subject to one or two qualifications. Costs count for very much—I am afraid more and more—in litigation. Many actions are fought out to the bitter end by reason of the large amount of costs at stake, which often far transcend in importance the original subject of dispute; and to some extent the figures which I have quoted may be explained by the inability or reluctance of parties to come to a settlement after considerable costs in an action have been incurred. The increase in defended actions may be partly due also to the temptation offered by delay in trying actions.⁵ Some clients, it is to be remembered, are not so sanguine

⁵ In the “Irish Judicial Statistics” for 1878-79, p. 52, Dr. Hancock observes, “For a portion of the population equal to that of Ireland, the number of writs issued was 12,478; to these no less than 5,757 defences were entered. In Ireland the number of writs issued was 23,526, while the defences were only 3,562,” “On an average taken from 256,901 actions commenced by serviceable process, nearly one-half are settled on service without any appearance entered; and it is

as to expect victory in litigation; they look to their solicitors to obtain for them the maximum postponement of the evil day. But there is no mistaking the general purport of these tables. A writ means more than it did; it more often implies a real dispute. It will be found too, that, as a rule, the percentage of appearances is largest when the number of writs is smallest; and that, for reasons which I am unable to divine, the percentage of appearances has distinctly increased since 1876.

TABLE 11.—*Percentage of Appearances to Writs.*

Appearances.		Appearances.	
1892	47·5	1873	34·9
'91	49·3	'72	33·6
'90	49·9	'71	33·3
		'70	32·5
1889	48·8		
'88	47·5	1869	33·7
'87	47·5	'68	34·7
'86	50·8	'67	30·0
'85	47·3	'66	28·8
'84	46·9	'65	28·3
'83	45·7	'64	26·6
'82	43·9	'63	27·0
'81	44·7	'62	26·6
		'61	25·4
1880	41·3	'60	26·2
'79	36·2		
'78	36·3	1859	27·3
'77	37·4		
'76	29·5		
'75	34·1	Increase between } + 20·2	
'74	35·4	1859 and 1892.. }	

In litigation, as in warfare, the victory is to the attacking party. Under every system of procedure, and in every country, the plaintiff, as a rule, succeeds, and the defendant, as a rule, is beaten—a fact borne out by figures which I append. The verdicts for plaintiffs are about three times as many as verdicts for defendants; and I know no country in which the percentage is much less. But in recent years will be noted a distinct tendency in verdicts for defendants to increase, a tendency most noticeable since the Judicature Acts;⁶ a tendency perhaps all the more remarkable because in almost every country of Europe, not

“probable, though the number cannot be precisely ascertained, that the plaintiff obtains payment, or a settlement, or judgment by default, in at least two-thirds of the whole number of actions so commenced without resistance by the debtor to the extent of putting in an appearance.”—“Fourth Report of Commissioners on Courts of Common Law,” p. 12. See Appendix A.

⁶ Ferri, “La Sociologie Criminelle,” p. 192; “Judicial Statistics, 1892,” p. xxx.

excepting England, the percentage of convictions in criminal trials is, on the whole, apparently increasing. Is the explanation wholly or in part to be found in the diminution of trials by jury? Do juries accept a lower standard of evidence than judges? Does the fact imply the presence of a new element of uncertainty in law, the old ideas of what is just and right and fair being shaken? or is it due, as I am disposed to think, to the elimination at an early stage of cases which are practically undefended?

TABLE 12.—Percentage of Verdicts for Defendants.

	Per Cent.		Per Cent.
1891-92.....	26·7	1867-70.....	19·9
'87-90.....	25·8	'63-66.....	20·5
'83-86.....	24·9	'59-62.....	20·8
'79-82.....	25·4	'30-34.....	19·8 ⁷
'75-78.....	24·0		—
'71-74.....	19·7	Increase	+ 6·9

Another point to be cleared up is the nature of the cases tried. To know what is the character of the actions brought; how they vary from time to time; what forms of actions are becoming obsolete, what more common, would be profoundly instructive. From such information we should learn as much respecting the disposition of people as from their songs, their literature, or their laws. Appended is a table of averages for some years of the chief classes of actions. It will be noticed that there is an increase in certain kinds of torts, and particularly in malicious prosecution, libels, and personal injuries. In actions for slander, on the other hand, there is not an equal increase, and actions for false imprisonment and assault have declined. Remarkable is the decrease in the number of actions on bills of exchange and promissory notes, and for goods sold and delivered, attributable in the main to a change in the mode of doing business and to the summary process for judgment now in use, though, also, it may be argued, one of the many signs that the quarrels of men of business are not settled in court to the extent to which they once were. Some of the changes are ascribable to the County Court Acts, especially the Act of 1888 (51 and 52 Vict., cap. 43); and it is probable that still greater changes in the class of actions tried in the High Court would take place if the original jurisdiction of the County Courts included all forms of torts.

⁷ The basis of calculation is the judgments entered up in the Queen's Bench Division.

TABLE 13.—*Nature of Cases Tried.*

	1859-62.	1863-66.	1867-70.	1871-74.	1875-78.	1879-82.	1883-86.	1887-90.	1891-92.
Libel	24	18	25	25	31	29	31	67	82+
Slander	31	25	24	27	22	19	25	30	45+
Malicious prosecution	7	4	7	5	9	14	11	17	16+
False imprisonment	37	28	17	16	11	12	13	14	16—
Assault	25	32	30	17	11	11	9	10	12—
Seduction	5	3	3	4	2	2	1	1	2—
Breach of promise.....	8	10	9	23	14	12	13	15	16+
Fraudulent representations	—	—	—	—	—	21	23	28	36+
Personal injuries under } Lord Campbell's Act.... }	35	106	116	106	87	116	109	119	166+
Other personal injuries.....	66	40	37	22	38	37	32	28	22+
Goods sold and delivered....	160	191	223	148	115	95	95	85	89—
Promissory notes, &c.	148	172	180	114	93	101	118	97	131—
Breach of contract.....	150	137	144	163	153	147	163	164	231+
Recovery of land	45	52	85	76	40	58	71	69	65+
" rent	18	19	32	22	19	25	26	35	23+
Trespass relative to land	37	35	30	24	24	33	55	56	67+
Life and marine insurance...	—	6	15	11	9	10	13	7	10+
Work and labour	113	127	127	102	123 ¹	123	115	113	148+

These figures, of course, represent only an insignificant fraction of the actions begun in the Queen's Bench Division, but probably they indicate the true proportions of the various kinds of actions in all stages. It will be noted that the great majority of them are connected with contracts—chiefly actions for goods sold and delivered, and breach of contracts. Most of the residue relate to actions for torts—running down cases and the like. To many persons it will be a surprise to find that the annual total number of actions tried out for breach of promise of marriage, which figure so largely in newspapers, has during more than thirty years varied from 8 to 16.

In country districts, where originate most assize actions, actions for slanders would appear to be much more numerous, and subject to greater fluctuation, than in London. The great increase in libel actions since 1886 will be noticed.

The next point of interest is the importance of the cases tried, and, in the first place, the amounts for which verdicts are given. As to this point, assistance is derived from returns moved for by Mr. Fowler.⁸ Analysing these returns and other data, we find:—

TABLE 14.—*Amounts Recovered.*

	Average Number of Actions where more than 100 <i>l.</i> were Recovered.	100 <i>l.</i> and more than 50 <i>l.</i>	50 <i>l.</i> and less.
Average, 1871-75	242	137	331
" '76-80	227	139	271
" '81-85	258	167	253
" '86-90	318	186	265
" '91-92	456	213	265

⁸ Some of the figures in these returns do not exactly agree with those in the "Judicial Statistics."

These figures indicate a growth in the importance of actions, due no doubt in part to the operation of the County Courts Acts. This will appear more clearly by comparing the above returns with those for 1837. In that year more than 50 per cent. of the verdicts were for sums of 50*l.* and under; in 1890, about 30 per cent.⁹ Of 950 verdicts in Westminster and London in 1869, 244 were cases over 100*l.*; the corresponding proportion for 1886-90 was upwards of 40 per cent. In 1891, out of 899 verdicts, 469 were for more than 100*l.*; in 1892, out of 978 verdicts, 668 were for 100*l.* and over.

One of the clearest results deducible from "the Judicial Statistics" is the decline in recent years of trial by jury, a decline not to be ascribed wholly to the operation of new rules, and apparently indicative of a growing distrust of the true Court of Equity, as the late Lord Bramwell defined trial by jury. Before the Judicature Acts it was almost the universal form of trial on the Common Law side of the Courts; the power given by the Common Law Procedure Act, 1854, s. 1, to a judge, with consent of the parties, to try issues of fact, was rarely used. Even now a jury is practically compulsory in certain classes of cases. But the institution is falling into disuse. Each sitting sees an increase in the non-jury lists. Trial by jury is found to be terribly expensive. A jury may, and often does, disagree; a single judge must be unanimous, and his decision is not followed by the waste which is the consequence of an abortive trial. A jury disagrees, and is discharged; and, to take an actual instance, the client finds himself in debt to his solicitor to the tune of nearly 300*l.*, with no absolute certainty that anything will be decided if he again goes to trial. The decisions of juries are difficult to foresee; and, strange circumstance, there does not appear to be in these democratic times the respect—I might also say reverence—for the decision of twelve fortuitous citizens which once existed. My own experience would lead me to think that this mode of trial is preferred chiefly by those who do not wish a decision on the merits.

The growth of trial by judge without a jury in London and Middlesex is clearly shown in the first of the two following tables. The second shows a tendency in the number of special juries to decline. Whether this be due to an impression that such a jury is not now so superior in intelligence and experience to a common jury as it once was, I do not know; but there is no reason to believe that a tribunal, once denounced as unconstitutional, will supersede the older form of trial.

⁹ Return to order of House of Commons, 22nd and 24th May, 1838.

TABLE 15.—*Percentage of Cases Tried by Jury.*

	Defended Cases with a Jury	Undefended Cases with a Jury.
	Per cent.	Per cent.
1892.....	53·8	15·6
'88-91	51·44	22·90
'84-87	55·05	25·4
'80-83	83·85	81·5
'76-79	93·50	88·1
Decrease	-40·42	-72·4

TABLE 16.—*Percentage of Cases Tried by Special Jury.*

1892	22·4
'88-91	21·8
'84-87	22·07
'80-83	26·1
'76-79	31·4
Decrease	-9·0

Less distinctly, but still, on the whole, clearly, the same increasing favour for trial by a judge is visible in the Probate Court. It is possible that in the County Courts a decrease of trial by juries would be detected but for the Employers' Liability cases, in which it is often for the interest of the plaintiff to seek to enlist the sympathy of a jury.¹⁰

One fact comes to light—the decline of proceedings in the district registries, which were established in 1876 in some seventy to eighty places—not indeed a decline from the figures for 1876, but a distinct decline from the highest point which was attained in 1879.

¹⁰ In 1847-50 the percentage of cases tried in County Courts by jury to total cases in which judgment was entered was 3·3 per cent. In 1866-69 it was 10·15 per cent. In 1888-91 it was 0·19 per cent., in 1892 0·22 per cent.

TABLE 17.—*Proceedings in District Registries.*

	Actions Trans- ferred to London.	Writs.	Appear- ances.	Judg- ments.	Execu- tions.	Sum- monses.	Bills of Costs Taxed.	Fees.
								£
1892.....	2,912	29,224	7,360	10,366	5,934	8,002	10,696	34,827
'91.....	2,588	26,229	6,634	9,035	4,990	7,254	9,667	29,501
'90.....	2,397	24,929	6,530	8,680	4,803	7,386	9,313	28,465
1889.....	781	26,207	6,959	9,108	5,357	7,600	9,929	30,327
'88.....	260	29,293	7,770	10,668	6,401	8,342	11,391	33,462
'87.....	332	30,323	7,955	11,240	6,787	7,834	11,741	33,812
'86.....	242	29,575	7,478	10,703	6,500	7,650	11,532	32,796
'85.....	273	29,111	7,630	9,955	6,190	7,941	10,942	32,665
'84.....	214	27,110	7,035	9,156	5,402	7,842	9,631	32,665
'83.....	241	30,851	7,567	10,250	6,470	10,826	11,183	27,805
'82.....	262	30,798	7,473	10,375	6,286	11,087	11,148	24,045
'81.....	242	32,373	7,710	11,292	6,830	12,649	12,008	25,488
'80.....	278	32,077	7,757	11,116	6,714	13,481	11,810	25,266
1879.....	335	39,835	8,552	13,390	8,814	13,884	14,696	29,764
'78.....	480	36,809	7,351	11,857	8,279	12,088	13,862	23,496
'77.....	360	32,957	6,655	10,787	6,983	10,357	11,470	24,859
'76.....	160	33,758	6,914	10,018	6,844	2,467	7,341	24,631
Decrease or increase per cent. since 1877 }	....	-11·32	+10·6	-3·8	-15·0	-22·76	-6·75	+40·09

A remarkable increase has taken place in the actions transferred to London. There is a decline in almost everything else (except the fees obtained by the Treasury). This decline is due to many causes; in some towns to a contraction of the business of the High Court, and the growth of the business of the County Courts; to some extent the change is ascribable to the facility for conducting proceedings in London.

A fact upon which the advocates of continuous sittings in Lancashire lay stress, is the preponderance of the business of the registries in that county—that is Manchester, Liverpool, and Preston. In Lancashire, in 1882-83, says Mr. W. H. S. Watts, were—

“Issued 27·96 per cent. of all the writs issued in the district registries, whilst the amount of fees is 37·123 of the whole, and the number of applications in “Chambers actually amounts to 55·063 of those in all registries throughout “England and Wales. Again, the number of writs issued out of the district “registries amounts to 16·244 of the number” (52·973) issued out of the central office in London.

(See Mr. W. H. S. Watts’s paper “On the Administration of “Justice in Lancashire.”—“Transactions of Manchester Statistical “Society,” 1884-85, p. 107.)

In Manchester and Liverpool district registries the writs issued in 1891 were 3,746, and 2,956; in 1892, 3,973 and 3,110, respectively, out of a total of 29,224.

It is impossible within the limits of this paper to deal exhaustively with the fluctuations in the business of each district registry. He who studies the figures may be able to deduce from them valuable results. They suggest curious speculations as to the explanation of the percentage of appearances to writs being greater in some towns than in others. Why in Manchester and Liverpool is it about one-third, while in Bristol it is about a fifth to a sixth? Why is the percentage of appearances in the registries less than in the Central Office in London? What explains the different percentage of executions to judgments in London from that in the country? These questions, and many others, I leave unanswered. Here I must be content to note the fact that only in six towns—Birmingham, Bristol, Cardiff, Leeds, Liverpool, and Manchester—were more than 1,000 writs issued in 1892, that in all the above towns, with the exception of Cardiff, there is a decrease in process issued, and that in others which once issued more than 1,000 writs, business has apparently fallen off.¹¹

In one respect there is a marked increase in the business of the Queen's Bench Division. In the course of almost every action applications are made from time to time at Chambers—applications which are often necessary, but which are sometimes needless and made mechanically—with the effect of inflating costs; applications which generate others, and may make each case the parent of fresh litigation. Many circumstances conspire to swell the numbers of such matters—chief among them being the long interval often intervening between the issue of the writ and the actual trial; a system of remuneration which would foster shortcomings even in a community of angels; and last, but not least, the practice of making costs “costs in cause.” To some extent in the Queen's Bench Division summonses are the substitutes for motions; but the latter also have increased. In 1859 the motions (exclusive of those for new trials) were 641; in 1889, 1890, and 1891 they were 952, 801 and 549. To some extent the increase in summonses is due to the procedure under Order XIV. But I cannot help thinking that the large number of summonses is one of the blemishes of our system. I do not adopt the homely language which I have sometimes heard, that, if there are fewer actions, more is made of them. But such applications occur to an extent unknown, so far as I can learn, under other systems.

¹¹ In Sheffield, in 1879, there were 1,629 writs and 357 appearances; in Nottingham 1,017 writs and 261 appearances. For 1892 the figures were: Sheffield, 744 and 164; Nottingham, 570 and 158.

They are eminently subject to the operation of rules; they notably increased after the Judicature Acts; they diminished with the introduction of the rules of 1883; and it is probable they might still further be reduced with advantage. I append a table showing the average number of summonses since 1859. A few of them were not in actions; they may have been incident to arbitrations and inter-pleaders, for example. But the great majority were episodes in actions:—

TABLE 18.—Average Number of Summonses.

1891-92	48,770	1867-70	58,600
'87-90	47,239	'63-66	45,836
'83-86	53,933	'59-62	43,589
'79-82	79,261		
'75-78	83,152	Increase	+ 11'8 per ct.
'71-74	59,225		

As to motions for new trials, something will be said under the head of Appellate Courts. With respect to motions in general, it may be noticed that they steadily rose after the Judicature Acts, attaining their maximum in 1889, when they were no fewer than 952, or about one hundred in excess of their number in 1886.

TABLE 19.—Special Motions.

	Motions.	
1891-92	580	}
'87-90	802	
'83-86	694	
'79-82	707	
'75-78	578	
'71-74	609	
'67-70	737	
'63-66	788	
'59-62	765	
Decrease per cent.	— 24'2	

If complete, the “Judicial Statistics” would clearly reveal another increase also open to criticism, and that is the increase in the fees. From a reduced number of actions an increased revenue is sometimes obtained. To some extent the increase may be more apparent than real. But undoubtedly the fees are higher than they were; when they have been revised it has been to the disadvantage of the suitor.¹² While the doctrine taught by early law reformers, but for a time forgotten, that justice should, as far as possible, be free, and that law taxes are the

¹² See returns moved for by Mr. Dodds, June, 1884.

2 K 2

worst of all possible taxes, is gradually winning converts, the weight of these taxes has been increased.

In the following table are set out the number of bills taxed in the Queen's Bench Division for some years:—

TABLE 20.—*Bills Taxed.*

1892	9,764	1882	14,817
'91	9,472	'81	13,683
'90	8,529	'80	12,355
1889	8,896	1879	12,254
'88	9,545	'78	12,072
'87	9,428	'77	11,388
'86	9,000	'76	7,185
'85	9,814		
'84	10,512	Increase per cent....	+ 35·8 ¹³
'83	14,436		

The maximum number of bills is taxed in November and July, the minimum in September. No statistics are accessible with respect to the exact amount of costs taxed in the Queen's Bench. With respect to the Chancery Division such information is published; but we may arrive at approximate figures as to the former, and from the amount of fees paid we may assume that the amount of costs taxed in 1891 and 1892 was about 303,600*l.* and 347,520*l.*—*i.e.*, about 32*l.* and 36*l.* each bill. It would seem that in 1889-90 in the Chancery Division the average amount of each bill was about 99*l.* There exists an impression, the truth of which cannot here be fully investigated, that litigation has become more costly. In Appendix M to the first report of the Commission of Inquiry into Common Law Courts (p. 687), are specimens of bills of costs taxed in the three Common Law Courts, and, if they are fair examples, they show that litigation was less expensive than it is. In an action in which Scarlett, then the foremost man at the Bar, and Alderson were retained, the "costs for plaintiff, after judgment on demurrer to declaration and inquiry executed, are 14*l.* 6*s.* 4*d.* money paid out of pocket; costs, 35*l.* 18*s.* 6*d.*" Plaintiff's costs on verdict, cause tried in London, witnesses residing in Lancaster, with Scarlett and Alderson as counsel, 65*l.* 4*s.* 4*d.* (of which 45*l.* 12*s.* were for witnesses); costs allowed 86*l.* 4*s.* 4*d.* Defendant's costs on a verdict (Serjeant Stephen and Parke, counsel): money paid, 10*l.* 15*s.* 4*d.*; costs allowed, 23*l.* —*s.* 6*d.* Defendant's costs on verdict in Exchequer: money paid, 10*l.* 11*s.* 3*d.*; costs, 23*l.* 11*s.* 9*d.* Probably these amounts are less than the average costs of proceedings since the Judicature Acts; and no wonder, for those were days when Sir

¹³ Up to 1881 the returns are "exclusive of bills taxed under the Statute;" after that date, "inclusive."

James Scarlett argued a motion for 3*l.* 3*s.*, when 13*s.* 4*d.* were allowed for instructions for brief, when solicitors got 3*s.* 4*d.* for attendance at Judges' Chambers, and when the term fee was 13*s.*

Long before the Judicature Acts there had been an increase of costs. In 3,760 verdicts for plaintiffs in 1830-34 the damages were 733,170*l.*, the costs 266,357*l.*, or about 36 per cent. of the amount recovered.¹⁴ In the "Second Report of the Judicature Commissioners" (Part II, p. 468) is an analysis of 141 actions in the Queen's Bench Division in the first six months of 1870. The total of the sum recovered was 22,522*l.*, the costs 13,791*l.*, the average taxed costs of plaintiffs only amounted to more than 60 per cent. of the verdicts.

Two points relative to the present costs of litigation may be here considered:—

(1.) The proportion of costs to the amount recovered.

(2.) The proportion of counsels' fees and Court fees to the total costs.

Taking at random 100 cases decided in the years 1892-93 in the Queen's Bench Division, I found that the total amount recovered was 27,912*l.*, the total taxed costs 9,687*l.*, or about 34 per cent. of the amount recovered. But this included several verdicts for unusually large amounts, it being notorious that the average amount recovered in a Common Law action is far less than 279*l.* Taking also at random 34 cases in which 100*l.* and under were recovered in the same years, the total amount recovered was 1,228*l.*, and the taxed costs of one side were 2,975*l.*; that is to say, the average sum recovered in these actions was about 36*l.*, and the average amount of costs 87*l.*—figures very similar to those in the analysis of the costs of actions in 1870, which showed that as to 97 actions in which 100*l.* and less were recovered the costs were 174 per cent. of the amount of the verdicts. These are the costs which the victor gets from the vanquished—if he can. We may not be far wrong in adding another 5 to 10 per cent. for costs which the victor ought perhaps to get, but which he does not—that is, costs as between solicitor and client not allowed on a party and party taxation.¹⁵ Selecting 26 cases in which the verdicts were for 100*l.*

¹⁴ 1834, XLVIII.

¹⁵ "A great, perhaps the greatest, evil of our system, as at present constituted, is the excess of the costs which a party succeeding is obliged to pay, over and above what he can recover from his antagonist. This is so certain and considerable, that a man shall in vain expect me to recommend him either to bring forward a rightful claim, or to resist an unjust demand for any such sum as 20*l.* or even 30*l.*—at least upon a calculation of his interest. I should presently declare to him he had much better say nothing in the one case, and pay the money in the other, even if he had a stamped receipt in his pocket, provided his adversary were a rich and oppressive man, resolved to take all the advantages the law gives him."—Brougham's "Speeches," 2, p. 475.

and upwards, it appeared that the total amount recovered was 6,560*l.*, the total amount of costs allowed on taxation was 2,468*l.*; that is to say, the average verdict was for 252*l.*, the average allocatur or certificate for costs 95*l.*—results not unlike those deducible from the analysis of 1870; according to which in the case of 44 actions for sums of 100*l.* and upwards the costs were 32 per cent. of the amount recovered. As to these figures there will be much difference of opinion. They may not confirm the common impression that the cost of litigation has increased; an increase, in part due, it is often said, to the large sums spent in payments to witnesses, who, if experts, cannot be obtained at the old rates of remuneration, and also to the fact that litigation is now largely conducted by public companies, to which costs are no object, and which appeal as a matter of course when they are beaten. The tendency of taxation on the Queen's Bench side is to make party and party costs more of an indemnity than they were,¹⁶ and the figures may merely indicate a transfer from solicitor and client to party and party costs. But the figures do confirm, as it seems to me, the impression that costs are too large. To be sure, many people think that a litigant who has cleared up a legal principle ought to be satisfied with the public service which he has performed, and to have no sordid thoughts of personal gain. And there may be force in the contention that there is no better way of making the law a terror to evil doers than by making it costly. The pity is that it should be no less dreaded by those who do well. What your impression may be I do not know; mine is that the present procedure in the Superior Courts is somewhat unsuitable for the trial of most actions in which 100*l.* and less are involved. It is too much like selling coals by grains and scruples, not by hundredweights and tons.

Often in discussions as to the costs of litigation are bandied to and fro recriminations as to the share of counsel and solicitor. To help to clear up this point I made a further analysis. Selecting 73 cases, it appeared that the party and party costs of one side delivered were 13,563*l.*, or an average of about 186*l.* an action; the costs allowed 7,469*l.*, or about 102*l.* an action; the counsels' fees 3,497*l.*, or about 48*l.*; the Court fees 617*l.*, or about 9*l.*¹⁷ I ought to add that the list examined included a considerable

¹⁶ Before the Judicature Acts, there was at Common Law a fixed scale of payments for witnesses. The practice now is to allow in respect of witnesses in party and party costs sums much larger than were once allowed. See Appendix B.

¹⁷ In first Appendix to fifth and final "Report of the Judicature Commissioners," p. 22, is a statement for the year 1870 of the cost of prosecutions—average at Assize Courts, 12*l.* 7*s.* 3*d.*; Criminal Court, 8*l.* 7*s.* 4*d.* The average for 1869-71 was, Assizes, 11*l.* 11*s.* 5*d.* In 1892 the average for Assize Courts was 16*l.* 15*s.* 6*d.*; in the Central Criminal Court 11*l.* 14*s.* 9*d.*

number of “heavy cases” in which counsels’ fees were unusually large, and that the amount of Court fees gives no just idea of their incidence in actions in which judgment is obtained by summary process. Selecting at random a few bills of costs of judgments under Order XIV, I find that the official fees were nearly 30 per cent. of the total costs—a curious commentary on the principle of Magna Charta, justice is not to be sold.

On the question whether actions are tried as expeditiously as they were, light is thrown by the following table, giving the average number of remanets in London and Middlesex every four years for about a quarter of a century.

TABLE 21.—*Average Remanets.*

1891-92.....	1,236
'87-90.....	1,037
'83-86.....	1,245
'79-82.....	798
'75-78.....	744
'71-74.....	322
'67-70.....	368
<hr/>	
Increase per cent.....	+ 235·9

This is an unsatisfactory record. The remanets in 1887-90 were, indeed, fewer than in 1883-86, but they were three times as many as in 1867-70, when the number of writs issued was in excess of the present number. In 1891 they were 1,310; in 1892, 1,160; and a marked increase is to be noticed after the Judicature Acts. Of late, however, remanets have diminished.

Even under the present system the life of an action may be very short, especially if it be put in the list of Short Causes. There is nothing to prevent an action being begun in January or February, and tried at the Spring Assizes; and in modifying or destroying the circuit system this must be borne in mind. If the venue be London or Middlesex, the interval between the issue of the writ and trial may be much longer. I took the trouble to examine 93 cases tried in 1892 and 1893, and it appeared that the average time between the issue of the writ and the actual trial was 209 days, or six to seven months—an unsatisfactory commentary on the doctrine of Magna Charta, that justice shall not be delayed. Two words of caution must be added. It must not by any means be supposed that the delay was in all cases owing to the operation of the rules of Court. In many cases the parties voluntarily stay their actions, and our procedure has no effective machinery for hurrying them on against their wishes. In the second place, there has been of late, partly owing to the creation of the Short Cause List, and partly owing to the diminution of business, a

remarkable acceleration of the time of trial. Never probably has the interval between issue of process and judgment been less than it is. The misfortune is that, if a defendant is ingenious and wealthy, he may be able to protract proceedings for a long time.

IV.—*The Business at Assizes.*

One of the oldest parts of our legal system, or indeed of English institutions, is the Circuit. For centuries, without a break, assizes have been held by justices in eire or of assize¹⁸ in certain towns: in Maidstone, York and Oxford, for example. Assizes may be traced clearly back to Henry II; but they existed even earlier.

“The examination of the Great Roll of the Pipe of 31 Henry I, shows that during his reign the practice was observed both for financial and judicial purposes. These journeys were the substitute under the Norman kings for the progresses of the earlier sovereigns who, whilst moving from one of their estates to another, heard the complaints of the defects of justice in the lower courts.”—Stubbs’s “Select Charters,” p. 141.

The circuits are one of the most picturesque and distinctive features of English national life. Nowhere else, except perhaps in the United States, is any institution corresponding to them. For judges and barristers they have social charms. There friendships are formed; the mess with its high jinks, Rabelaisian songs, and good fellowship, is something by itself—a club, and more than a club; and not for much would men barter their memories of circuit life when they were young. Powerful interests are arrayed in maintaining the assizes. A circuit practice is usually laboriously and slowly built up. The assizes turn into certain channels twice or thrice a year a stream of business. The reluctance to part with such an institution is strong—how strong every county member of Parliament well knows. All the same, they are not, and never again can be, what they were. One part of their functions—the administrative and executive—has almost disappeared. There was once a conception of the duties of judges of assizes far more extensive than that to which we are accustomed.

“Besides their usual work of the trial of prisoners and of causes,” says Mr. Hamilton, in an account of the work of Assizes, “they appear to have been employed as what we should call inspectors of the county justices. They were directed to inquire during their circuits into the manner in which the justices exercised their functions. They were to require the justices to furnish them with reports on various subjects, especially on ‘recusants,’ alehouses, rogues, paupers, and so forth. Matters of county business, such as those relating to rates and assessments, were referred to them, and orders upon these matters were frequently issued by them. They adverted in their charges to questions concerning the trade and manufacture of the district, and they gave interpretations of the law for the

¹⁸ See *ex parte Fernandez*, 10 C.B., N.S. 3.

guidance of the justices, without requiring individual cases to be argued before them.”¹⁹

Mr. Hamilton’s description, which applies to circuits between the times of Elizabeth and Anne, and to a certain extent to a later period, has long ceased to be true. It would be almost ridiculous to speak now of Assizes as Baron Alderson did, when he described them as the “safety valves” of society.

The following are the averages of the causes entered and tried in the following periods:—

TABLE 22.—*Causes Entered and Tried in Assizes.*

	Entered.	Tried.	Recovered.	Population.
			£	
1891–92.....	1,203	793	148,846	(1891) 29,001,018
'87–90.....	1,218	745	101,587	
'83–86.....	1,217	794	105,929	(1881) 25,974,839
'79–82.....	1,226	825	139,907	
'75–78.....	1,409	908	133,227	
'71–74.....	1,497	987	236,609	(1871) 22,712,266
'67–70.....	1,569	1,074	240,334	
'63–66.....	1,533	1,104	225,715	
'59–62.....	1,287	970	136,630	(1861) 20,066,224
'23–27.....	+ 2,051*	....	....	(1821) 12,000,236
Decrease or increase } per cent.	–41'34	–18'2	+ 9'6	+ 141'6

* This includes the cases entered on Circuit, in the Counties Palatine, and in Wales. Appendix to “First Report of Commissioners on Courts of Common “Law,” p. 204.

This statement shows an almost uninterrupted decline, due in the main to the increase of County Court business, but significant also, it may be, of a tendency to centralise business in London. Since 1859-62 there has been a decline of 18·2 per cent. in the causes tried. This is to some extent due to “remanets;” but the great cause is hidden away in the judicial statistics under the heading “record withdrawn.” I append by way of comparison the following returns taken from the “First Report of the Common “Law Commissioners, 1829,” and the “Report of the Common “Law (Judicial Business) Commissioners, 1857.”

Average for twelve years ending 1856 ...	1,329 (entered)	1,094 (tried)
" ten " '44 ...	1,682 ()	1,394 ()
(Entered) 1827	2,519	
" '26	2,084	
" '25	1,926	
" '24	1,839	
" '23	1,886	

¹⁹ “Quarter Sessions from Queen Elizabeth to Queen Anne,” p. 66. For a description of the varied work of judges of assizes in last century, see “Journal of a Gloucester Justice,” 1715-56, “Law Magazine,” 1861.

The state of things may be thus roughly expressed : in 1823-27 1 cause entered on circuit to every 6,000 inhabitants, in 1891-92 1 to every 24,000.

Upon what circuits has an increase, upon what a decrease, taken place? To answer this question would necessitate a long inquiry. Many changes have been made in recent years in the boundaries of some of the circuits. In the past they were frequently recast. Henry II at first created six circuits; by-and-bye he divided England into four parts. In the reign of Edward II were seven circuits. At what time the old number six was restored is uncertain.²⁰ Nowhere exists, as far as I know, an adequate history of the changes in the circuit system; writers on English law speak vaguely on the subject; and a monograph on it is much needed. This, however, is not the time or place for attempting to supply the defect. The history of all the changes, even since 1859, would lead me far afield. The materials for an exhaustive account of the business on circuits, even in recent years, are almost inaccessible; and I have confined myself to giving information, necessarily imperfect, about the chief circuits.

TABLE 23.—*Oxford Circuit.*

	Actions Entered.	Actions Tried.
1891-92	56	35
'86-90	75	46
'81-85	99	73
'76-80	124	87
'71-75	138	94
Decrease per cent.	— 59·4	— 62·7
Annual average twelve years } ending 1856	168	142
Annual average ten years } ending 1844	245	....
Average 1823-27	362	212

Average Amount Recovered.

	£
1876-80	8,147
'71-75	11,729

²⁰ See first Report of Commissioners on Courts of Common Law :—"Whatever period the number of circuits may have been restored to six, or settled at that number, a comparison of the present circuits with those established by King Henry II in the twenty-second year of his reign, will show that great changes have taken place. Thus Essex and Hertford were at first part of the Norfolk circuit; Hampshire, now forming part of the Western circuit, and Berkshire and Oxfordshire, now forming part of the Oxford circuit, were included in the Home circuit; and Staffordshire, now part of the Oxford, was included in the Midland circuit," p. 55. In second Appendix to "Judicature Commission," Fifth and Final Report, p. 47, is an account of recent changes in circuits.

TABLE 23 *Contd.*—*Western Circuit (including City of Bristol).*

	Actions Entered.	Actions Tried.
1891-92	118	102
'86-90	110	67
'81-85	105	85
'76-80	106	82
'71-75	109	86
Decrease or increase per cent.	+ 8·2	— 18·6
Annual average twelve years } ending 1856	128	112
Annual average ten years } ending 1844	187	164
Average 1823-27	378	....

Average Amount Recovered.

	£
1876-80	8,049
'71-75	9,933

Midland Circuit.

	Actions Entered.	Actions Tried.
1891-92	193	117
'86-90	188	104
'81-85	147	99
'76-80	138	106
'71-75	247	149
Decrease per cent.	— 21·8	— 21·4
Annual average twelve years } ending 1856	106	100
Annual average ten years } ending 1844	159	157
1823-27	231	....

Average Amount Recovered.

	£
1876-80	10,085
'71-75	28,239

South-Eastern Circuit.

	Actions Entered.	Actions Tried.
1891-92	104	63
'86-90	115	69
'81-85	137	102
Decrease per cent.	— 24·0	— 40·0

TABLE 23 *Contd.*—(*Home Circuit.*)

Annual average twelve years ending 1856	305	261
Annual average ten years ending 1844		
1823-27, average entries	272	....

Northern Circuit.

1891-92	350	244
'86-90	369	234
'81-85	390	215
'77-80	411	208
Decrease or increase per cent.	- 14·8	+ 15·4

Average Amount Recovered.

	£
1877-80	29,850

Note.—Writing of the figures for 1883, Mr. W. H. S. Watts remarks: “the cases entered for trial on the Northern Circuit are 35·78 per cent. of the whole number of cases entered for trial on all the circuits together, and the causes actually tried are 28·778 per cent. of the whole.”—“The Administration of Justice in Lancashire,” p. 110.

North-Eastern Circuit.

	Actions Entered.	Actions Tried.
1891-92	255	157
'86-90	249	154
'81-85	236	157
'77-80	253	164
Decrease per cent. ....	....	- 4·3

Average Amount Recovered.

	£
1877-80	19,885

Old Northern Circuit.

	Actions Entered.	Actions Tried.
Ten years ending 1844 (exclusive of Counties Palatine).....	242	200
Ten years ending 1844 (inclusive of Counties Palatine).....		
1823-27, average entries (exclusive of Counties Palatine).....	369	....
1823-27, average entries (inclusive of Counties Palatine).....		
1823-27, average entries (exclusive of Counties Palatine).....	707	....
1823-27, average entries (inclusive of Counties Palatine).....		

TABLE 23 *Contd.*—*North Wales Circuit and Chester Circuit.*

1891-92	45	36
'86-90	36	27
'81-85	35	31
'76-80	36	33
'71-75	41	35
Increase per cent.	+ 9·7	....
1856.....	52	48
'44.....	29	15

Average Amount Recovered.

£

1876-80	2,497
'71-75	2,700

Note.—The returns for 1876 relate only to North Wales and Chester Circuit.

South Wales Circuit.

	Actions Entered.	Actions Tried.
1891-92	82	53
'86-90	83	51
'81-85	62	42
'77-80	42	31
'71-75	48	33
Increase per cent.	+ 70·8	+ 60·6
1856.....	51	42
'44.....	80	57

Average Amount Recovered.

£

1876-80	3,901
'71-75	6,928

Three things will strike anyone examining these figures: (1) a very large proportion of the cases were decided in Lancashire and Yorkshire. Of the actions tried in 1892, about 35 per cent. were decided on the Northern and North-Eastern Circuits; (2) on the majority of the circuits is a decrease, and only on one—South Wales—is a considerable increase; and (3) on the circuits on which the entries are large, the proportion of trials is small. On the Northern Circuit, for example, only 67 per cent. of the cases entered in 1892 were tried.

No complete returns exist as to the number of actions entered and tried at each Assize town. But in the “Report of the Council

"of Judges" in August, 1892, is the following statement of the average number of cases tried at each assize in 1888-91:—

TABLE 24.—*Average Number of Cases Tried at each Assize Town.*

Liverpool	58½	Mold	¼	Beaumaris	2
Manchester	53½	Presteign	¼	Northampton	2
Leeds	56	Appleby.....	½	Worcester	2
Birmingham	31	Aylesbury	½	Hereford	2
Glamorgan	21	Ruthin	½	Cambridge	2
Bristol	14	Dolgelly.....	½	Somerset	2
Newcastle	13	Cardigan	1	Oxford.....	2
Durham	11	Bedford	1	Suffolk.....	3
Chester	9	Huntingdon	1	Gloucester	3
Exeter	8	Hertford	1	Carmarthen	3
York.....	6	Montgomery.....	1	Derby	—
Carlisle	6	Brecon	1	Chelmsford	4
Nottingham	7	Warwick	1	Leicester	4
Norwich	6	Lancaster	1	Shrewsbury.....	4
Winchester	5	Reading.....	1	Surrey	4
Lincoln	3	Monmouth	1	Stafford	6
Carnarvon	3	Wilts.....	1	Lewes	6
Bodmin	3	Haverfordwest	1	Maidstone	7
Oakham	—	Dorchester	2		

Note.—In the second appendix to Fifth and Final Report of Judicature Commissioners, p. 45, is a table showing the business in the chief towns on the Northern Circuit. The following table of causes entered is not complete, but the returns are, it is said, "complete enough, we hope, to justify a general "argument based upon them."

	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.
Durham	24	—	31	19	15	16	24	36
Newcastle	14	—	19	—	20	25	27	15
Carlisle	11	—	16	10	6	—	12	6
Appleby	—	—	4	—	—	—	—	3
Lancaster	—	—	15	29	7	9	12	8
Manchester.....	195	155	174	143	142	149	146	173
Liverpool	315	319	304	278	240	309	234	290

In Appendix to Report of Circuit Regulation Commission, 1845, is information as to actions entered or tried on circuit from 1835 to 1844. The annual average of entries and trials at Liverpool was 279 and 194. In "Whitelock's Memorials," p. 293, are incidental references to the cases entered on the Oxford Circuit in 1648. The entries were:—Reading, 44; Oxford, 35; Gloucester, 99; Monmouth, 10; Hereford, 53; Shrewsbury, 99; Stafford, 70.

Obviously the holding of Assizes in some of the above towns is, so far as civil business is concerned, almost an archæological

form or historical survival. In some towns it may happen that no cases are entered; in others are always only a few cases to be tried.

What classes of cases are tried at Assizes? In order to throw light upon this question have been compiled two tables, similar to those prepared for business in Middlesex and London, showing the average number of cases tried in periods of four years since 1859.

TABLE 25.—*Nature of Cases Tried at Assizes.*

	1859-62.	1863-66.	1867-70.	1871-74.	1875-78.	1879-82.	1883-86.	1887-90.	1891-92.
Libel	23	30	33	37	30	28	36	57	69 +
Slander	40	30	48	52	55	46	60	54	85 +
Malicious prosecution	9	9	14	14	16	14	12	13	6 —
False imprisonment	26	29	14	15	14	15	13	9	8 —
Assault	34	34	26	19	14	13	17	14	19 —
Recovery of land	103	116	117	94	69	53	50	48	34 —
„ rent	6	12	13	12	14	18	16	18	12 +
Trespass relative to land ...	121	129	109	93	94	76	72	63	70 —
Personal injuries under } Lord Campbell's Act.... }	26	81	121	140	103	79	69	73	85 +
Seduction	11	10	10	10	8	5	7	7	8 —
Other personal injuries.....	46	71	69	66	71	47	51	47	44 —
Fraudulent representations	—	—	—	—	—	13	8	15	15 +
Bills of exchange and } promissory notes, &c. }	91	104	113	89	74	72	71	59	59 —
Breaches of contract.....	88	142	204	266	209	166	134	105	115 +
Goods sold and delivered ...	119	170	169	146	142	113	112	104	122 —
Breach of promise of } marriage	21	25	29	56	32	28	33	40	36 +
Life and marine insurance...	—	5	9	16	10	15	14	12	17 +
Work and labour	56	97	108	85	83	80	66	77	68 +

In the following class of cases is a decline : malicious prosecution, false imprisonment, assault, actions on promissory notes and bills of exchange, recovery of land, trespass relative to land. There is an increase in actions for libel, slander, recovery of rent. On Circuit, as in London, there is a considerable increase in actions for libel—they are, in fact, three times as many as they were. Great activity prevails as to torts, *e.g.*, slander, over which the County Courts have no original jurisdiction. The table, on the whole, confirms the impression that commercial cases no longer are so common as they were. On the other hand, it does not confirm the impression that actions for breach of promise of marriage, of which we hear so much in newspapers, are increasing.

The next point to be considered is the nature of the cases as measured by the amount of the verdicts. Here is a table, similar to that prepared with respect to the trials in London and Middlesex, of the average amounts recovered.²¹

²¹ The figures in Mr. Fowler's returns do not agree entirely with those in the "Judicial Statistics."

TABLE 26.—*Amounts Recovered.*

	More than 100 <i>l.</i> Recovered.	More than 50 <i>l.</i> and Less than 100 <i>l.</i>	50 <i>l.</i> and Less.
Average 1871-75	278	123	264
" '76-80	199	113	217
" '81-85	193	110	191
" '86-90	181	118	186
" '91-92	212	119	186

Comparing the figures for the Assizes with the corresponding figures for London and Middlesex, it will be observed that the percentage of verdicts over 100*l.* in the former is less than in the latter, while the verdicts under 50*l.* are more numerous. In short, the business at Assizes, measured by a money test, is less important than that in London. At the same time it is but fair to add that the verdicts at Assizes are larger than they were.²² In 1837, for example, the verdicts above 50*l.* were under 40 per cent.; in 1859-60 they were 47 per cent.; in 1891-92 they were over 60 per cent.

Here may be stated the total number of actions tried, with the amount recovered, in Middlesex and London and on Circuit.

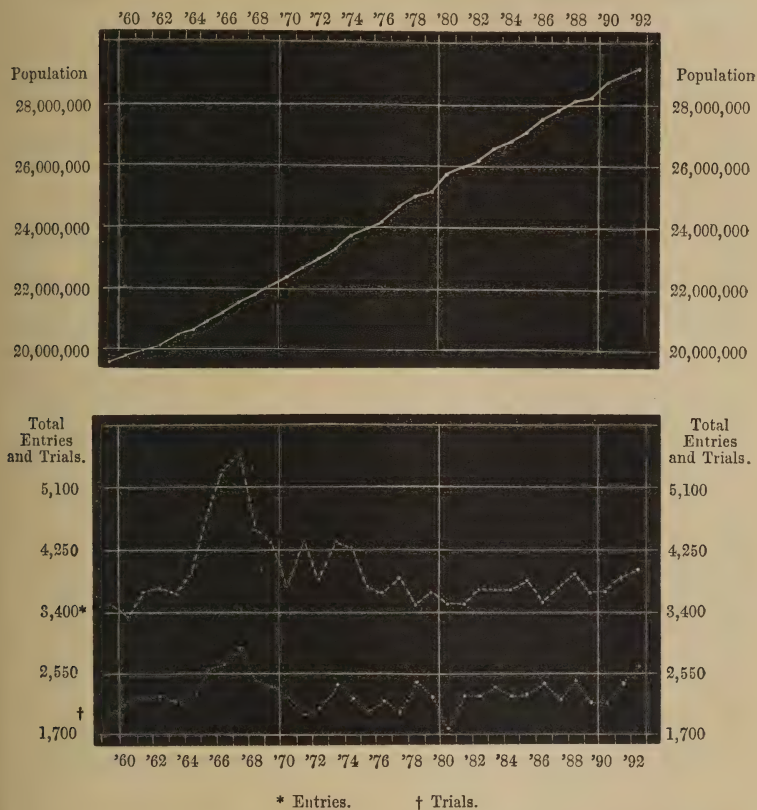
TABLE 27.—*Total Number of Causes Entered and Tried in Superior Courts of Common Law.*

	Entered.	Tried.	Recovered.	Population.
1891-92	3,808	2,337	784,620	(1891) 29,001,018
'87-90	3,657	2,015	389,216	
'83-86	3,614	2,096	374,842	
'79-82	3,511	1,951	340,288	(1881) 25,974,839
'75-78	3,592	1,961	303,148	
'71-74	4,076	2,156	429,474	
'67-70	4,383	2,472	470,047	(1871) 22,712,266
'63-66	4,303	2,390	421,927	
'59-62	3,502	2,133	270,798	(1861) 20,066,224
Increase per cent.	+ 8·7	+ 9·6	+ 189·7	+ 44·02
Average entries 1823-27	5,267	....	....

²² Brougham ("Speeches," 2, p. 493), describing an analysis of the verdicts at one of the Lancaster Assizes, states: "The average amount of these verdicts I found to be for sums under fourteen pounds—thirteen pounds odd shillings each."

"We think it probable that nearly one-half of the causes tried at the assizes are for causes of action not exceeding 20*l.* each, and that the expenses of litigation are equal to at least four times the aggregate amount actually recovered."
—"Fifth Report of Commissioners of Courts of Common Law, 1833," p. 16.

Entries and Trials of Actions in London and Middlesex and on Circuit.



Here is a record of a slight increase in entries and trials, and a very large increase in the amount recovered; the latter fact probably owing, in the main, to the tendency of juries to award larger sums than formerly. Comparing these figures with the population, the table indicates a decrease; in 1859-62, in round figures, one case was *entered* for every 5,700 inhabitants; in 1891-92, one for every 7,600; in the former period one case was *tried* for every 9,400; in the latter one for every 12,000 inhabitants; and comparing the returns with those for 1823-27, in the Courts at Westminster, the Counties Palatine, and in Wales, there is a decline in the entries of no less than 27 per cent. It will be noted that the years with the largest number of entries of cases were those with the smallest percentage of trials, and that there is surprisingly small variation in the number of the latter.

V.—*Chancery Division.*

The business of the Chancery Division consists of three kinds of causes and matters :

- (a) Those involving important questions of law and fact ;
- (b) Those relating to small sums, requiring the exercise of judicial functions, but rarely presenting any difficulty ;
- (c) Cases in which there is no litigation proper, and in which the Court protects or administers property.

There was a time when most of such cases were treated alike—when even if no facts were in dispute a simulated action was proceeded with—an action as unreal as a Common Recovery. This has been changed. For many years the tendency of reform of Chancery procedure has been to substitute summary procedure by petitions and summonses ; and since 1883 the use of originating summonses has been greatly extended. Another marked change has been the removal from the Chancery Division of much administrative or quasi administrative work. By the Charitable Trusts Act, 1853, under which Commissioners were appointed to do what once was done at Chambers or in Court, and by the Act passed in 1890, and the rules made thereunder, transferring to the Official Receiver the settling of the lists of contributories, this work has been much reduced. The extension of the jurisdiction of the County Courts has considerably lessened the business of the Queen's Bench Division. No similar results have followed the conferring of equity Jurisdiction upon County Courts.²³ Only a few Equity suits or proceedings are begun in the County Courts—in 1892 they were only 714—and this kind of business shows no signs of increase. On the other hand there is a remarkable growth in the business of the County Palatine of Lancaster, due, it is sometimes alleged, to a particularly liberal scale of costs. Before Lord Esher's Committee of Inquiry into the practice of the Chancery Division in 1886, evidence was given that “the County Palatine work had increased about 40 per cent. in the last six years.” But the decentralisation of equity business is apparently far off.

Several circumstances conspire to increase the business of the Chancery Division. This may in part be due to the preference of solicitors for a tribunal the sittings of which can be calculated with precision. Many of the cases cannot be disposed of out of

²³ For some reason the equitable jurisdiction of the County Courts in Ireland has thriven. “The equitable jurisdiction conferred on the Irish County Courts by the Act of 1877 has in four years far exceeded the amount of County Court equitable business. In an equal population in England and Wales where the jurisdiction has existed since 1865, the Irish cases were 659 as compared with 125 in the same population in England in 1879.”—“Irish Judicial Statistics,” 1882, p. 67.

Court. Obviously there is little room for arbitration and other extra-judicial modes of settling the suits which come before this tribunal. Though the same scales of costs are in force as in the Queen's Bench Division, costs on the higher scale are more frequently given in Chancery; and, what is particularly attractive, is the practice of allowing costs, charges and expenses out of funds. A Chancery suit is more remunerative than a Common Law Action to a solicitor, who complains that for a long attendance at Chambers by him, or more often, his clerk, he gets only 6s. 8d., that he receives nothing for drawing up most orders, and that payments for counsel which would be allowed on the Chancery side are taxed off in the Queen's Bench. There are still assigned to the Chancery Division all causes and matters for the administration of the estates of deceased persons, the dissolution of partnerships or the taking of partnership accounts, the redemption or foreclosure of mortgages, the raising of portions or other charges on lands, the sale and distribution of the proceeds of property subject to any lien or charge, the execution of trusts, charitable or private, the rectification or setting aside of deeds or other instruments, specific performance of contracts for the sale of real estate, the wardship or custody of infants, and the care of infant's estates—in other words, matters and causes affecting the disposal of large sums and funds. With the growth of the wealth of the country, we should expect a considerable increase of actions in the Chancery Division; and such is the result shown by the following statement of the average number of writs of summons and originating summonses (including bills) in the Chancery Division:—

TABLE 28.—*Writs and Originating Summonses.*

		Population.
1891-92	6,680	(1891) 29,001,018
'87-90	7,115	
'83-86	6,840	
'79-82	6,239	(1881) 25,974,439
'75-78	4,837	
'71-74	3,363	(1871) 22,712,266
'67-70	3,381	
'63-66	3,184	
'59-62	2,880	(1861) 20,066,224
Increase	+ 132 per cent.	+ 44·02 per cent.

There is a distinct tendency in originating summonses to increase—a tendency which becomes very manifest after 1883, and which is ascribable, no doubt, chiefly to the operation of the new rules. In 1889-90 they were 3,640, as against 3,249 writs;

2 L 2

1890-91, 3,517, as against 3,140 writs; and in 1891-92, 3,548 as against 3,031. The figures in the above table show an increase of 132 per cent., while the population has increased about 44 per cent.

The increase has not been continuous. There have been periods of stagnation, and in some years the volume of business has actually diminished. In the debates on the Bill appointing a Vice-Chancellor, in 1813, Sir Samuel Romilly expressed the opinion that the business of the Court of Chancery in Lord Hardwicke's time was equal to what it then was. Writing on the condition of the Equity Courts in 1840, the late Mr. Edwin Field said, "Notwithstanding the vast growth of this great nation in wealth and in population during the last hundred years, the same number, as nearly as possible, of bills were annually filed a hundred years ago as now." ("Appendix to Chancery Commissioners' Report," p. 1146);²⁴ and he referred in proof to the following figures:—

Bills Filed (including Bills of Revision and Supplement).

1745	2,064	1801	1,325
'46	2,041	'10	1,775
'47	2,138	'22	2,333
'50	1,744	'23	2,337
'60	1,481	'24	2,069
'70	1,318	'35	2,354
'80	1,328	'37	2,171
'90	1,152	'38	2,039
1800	1,394	'39	2,097 ²⁵

In the last half of last century and in the early part of this there was a decline in business, due partly to the want of sufficient judicial strength. Certainly the appointment of the Vice-Chancellor in 1813 was followed by an increase of proceedings. From 1810 to 1812 the average number of causes set down was 540.²⁶ In 1813 the Vice-Chancery Court was created, and during the three

²⁴ See Report of Committee on Delays of Suits in Chancery, 1810-11, p. 32. Return respecting Court of Chancery, 25th March, 1836; also Report xliii, 1836, and liii, 1854. In view of the decrease of business in recent years on the Common Law side, it is curious to note that Mr. Field observes: "I can find no corresponding return as to Common Law business, but have no doubt there has been an enormous increase. There were 30,000 more writs issued in 1830 than in 1820. The annual number is nearly 100,000." ("Common Law Report," p. 202), "Observations of a Solicitor on Defects of the Equity Courts," p. 67 n.

²⁵ To these figures in the earlier years must be added the bills in the Courts of Exchequer. In 1811 they were 655. Between 1750 and 1836 they were usually between 250 to 300.—"Return," 25th March, 1836, p. 20. In Cooper's "Chancery Miscellanies" (vii, p. 1), it is stated that Lord Bacon made 2,000 decrees or orders in a year.

²⁶ Lord Chancellor Cottenham's speech on Chancery Reform.—"Hansard," 1836, vol. xxxiii, p. 409.

years after the passing of the Act establishing it, the average was 717. From 1823 to 1825 it was 945, from 1833 to 1835, 1,301. Still to an intelligent observer such as Mr. Field, the outlook in 1840 for practitioners in Equity seemed gloomy. "Its suitors have diminished probably twenty fold, that is, they bear a twenty fold decreased relation to the population of the country."

The following table records the average matters heard and the remanets :—

TABLE 29. (a.)—Average Matters Heard and Remanets.

	Average Matters Heard.	Remanets.	Population.
1891-92	1,164	668	(1891) 29,001,018
'87-90	1,212	702	
'83-86	1,892	846	
'79-82	2,400	775	(1881) 25,974,439
'75-78	2,153	598	
'71-74	2,140	599	(1871) 22,712,266
'67-70	2,167	544	
'63-66	1,927	530	
'59-62	1,986*	431	(1861) 20,066,224
Decrease or in- crease per cent.. }	-41'3	+55	+44'02

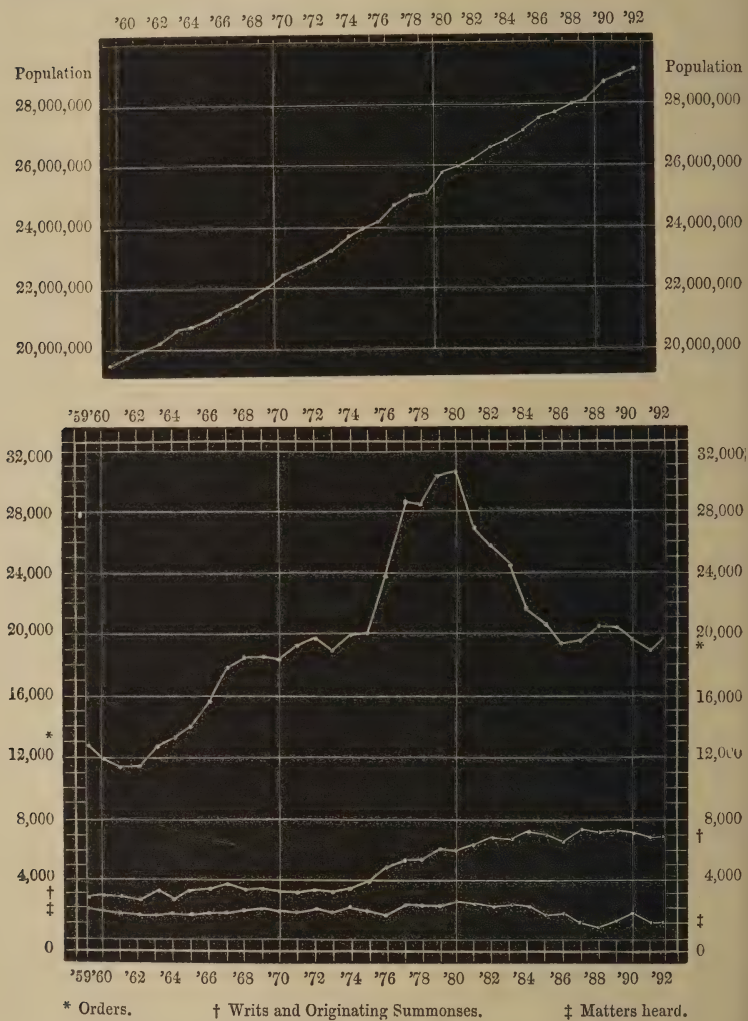
* Apparently in the returns up to 1875 were included matters of a kind subsequently excluded. But it is not probable that the results were much affected by the change.

(b.)—Actions Set Down and Heard.

	Actions Set Down.	Actions Heard.	Causes for further Consideration Heard.
1891-92	1,133	510	181
'87-90	1,101	497	246
'83-86	1,147	576	566
'79-82	1,447	675	612
'76-78	1,055	683	419
Decrease or increase per cent. }	+7'4	-25'3	-56'8

This shows a decrease since 1859-62, a large decrease since 1879-82, in matters heard, and a considerable decrease in actions heard. The year in which the maximum number of matters was heard was 1880, when they rose to 2,569; the largest number of writs and other originating proceedings in Chancery matters being in 1887 (7,195). It will be noted that there is a considerable increase in the remanets. The general course of the business will be tolerably plain from the graphic delineation of writs of summons,

originating summonses, orders (drawn up by Registrars and in Chambers), and matters heard.



Of the several modes of measuring the work of the Chancery Division, one is the amount of the Suitors' Fund or money standing to the credit of suitors. An extract from Twiss's "Life of Lord Eldon" is on this point instructive—

"The total amount of personal property belonging to the suitors of the Court of Chancery, which was lodged with the Accountant General of that Court in 1780, the period mentioned by Sir Samuel Romilly (in a discussion of the Vice-Chancellor's Appointment Bill) was 1,668,180*l*. By the end of the same

century that amounted to 17,000,000*l.*, and between 1800 and 1820 it reached 34,000,000*l.*" (3'364). "In 1750, under Lord Hardwicke, the number of these accounts was 1,006; in 1810 under Lord Eldon it was 7,521." (3'365.)

In 1892 the number of accounts open in the Chancery Division was 35,703; while the balance of stocks and securities on the several accounts was more than 65 million £.

Another test of the volume of business is the number of orders drawn up by the Registrars and in Chambers; all which appear in the following table:—

TABLE 30.—*Orders Drawn Up.*

	Drawn up by Registrars.	Drawn up in Chambers.
1891-92	10,294	8,926
'87-90	10,308	9,528
'83-86	15,363	5,956
'79-82	16,152	12,197
'75-78	12,799	12,275
'71-74	9,879	9,536
'67-70	8,513	9,695
'63-66	7,116	6,612
'59-62	6,487	5,184
Increase per cent.	+ 58·6	+ 72·2

The orders drawn up by the Registrars still preponderate. The maximum—17,096—was in 1884, since which time there has been a gradual diminution. In 1892 the number was 10,377. The largest number of orders of all kinds—30,483—was made in 1880.

A third mode of measuring the work of the Chancery Division is to note the average number of bills taxed and the amount of costs allowed.

TABLE 31.—*Bills Taxed and Amount of Costs.*

	Average Bills Taxed.*	Average Amount of Costs.
		£
1891-92	9,340	913,856
'87-90	10,674	1,082,839
'83-86	9,784	1,228,823
'79-82	9,692	1,265,926
'75-78	8,558	1,076,338
'71-74	8,294	1,021,353
'67-70	8,054	921,033
'63-66	6,966	746,328
'59-62	7,142	779,489
Increase per cent.	+ 30·7	+ 17·2

* The return for 1892 does not include taxations in lunacy, the bills in which in 1891 were 709.

There appears to be a tendency in the average amount of the bills to diminish, it was about 98*l.* in 1891-92, and about 130*l.* in 1879-82.

Examining the contentious business of the Chancery Division, one finds—

(a.) A considerable increase in writs and originating summonses, much in excess of the increase in population since 1859-62, and a remarkable increase since 1875-78.

(b.) A diminution in matters heard since 1879-82, when the highest point was reached.

(c.) A diminution in actions tried since 1876-78.

(d.) An increase in remanets from 1859-62 up to 1883-86, and from that period a diminution.

Examining the administrative work of the Chancery Division, we are struck with these facts:—

(a.) A great increase in the number of receivers' accounts and the amount of receipts and disbursements.

(b.) A diminution in accounts passed other than receivers' since 1880.

(c.) A decrease in recent years in the sales and purchase of estates under orders of Court. The maximum of the former was 1,026 in 1877, and the minimum 411 in 1861; of the latter, the maximum and the minimum, respectively, 145 in 1884, and 50 in 1892.

Many of these changes are the outcome of the Conveyancing Acts, the Settled Land Act, and of the changes in the rules as to administration actions: but they probably are ascribable in part to economical causes, which I am inclined to think affect litigation even more than statutes or rules of procedure.

Very old are the complaints as to the inadequate number of Judges in the Chancery Division. In 1813 the measure creating the office of Vice-Chancellor of England was passed. Two more Vice-Chancellors were created in 1841, and in 1876 there was a further addition. To the Chancery Division has been, from time to time, assigned a Judge of the Queen's Bench Division to hear and determine witness cases, and one sits to dispose of company cases. Against this increase in strength is a slight set-off: the Lord Chancellor sat formerly both as a Judge of first instance and as an appellate Judge. He now never sits in the first of these capacities; he rarely sits in the second, except in the House of Lords and in the Judicial Committee of the Privy Council. The Master of the Rolls, too, now sits only in the Appeal Court.

The Court of Chancery is not what it was in the days of Lord Eldon. Investigation would disclose no scandals similar to those laid bare by the "*Edinburgh Review*" in 1823, and by Mr. John

Williams in the House of Commons in 1825.²⁷ No cases drag along for years in the fashion of the famous "*Ware v. Horwood*." Still complaints are often made as to the slow rate of progress, and the words of Lord Langdale in 1835 may not have ceased to be true: "The want of sufficient judicial power is apparent from the constantly existing arrears. No application of the Judge has for many years past been sufficient to keep down the business."²⁸ No doubt there is a real difference in this respect between the Chancery and Queen's Bench Divisions; the investigation of accounts, the administration of large estates encumbered with debts, and the thousand and one questions incidental to the distribution of the surplus among claimants with diverse rights, must often be spread over many years. The Chancery Commissioners of 1826 remarked, in answer to the hostile criticisms of their day, "It may therefore happen, and often does happen, that in this sense a Chancery suit will usefully endure"—"usefully" for whom is not clearly explained—"for more than a century." But such "endurance" is fortunately rare, and is likely to become rarer; and, if I am not misinformed, never had suitors less reason to be dissatisfied with proceedings in the Chancery Division than at present.

VI.—*Palatine Court of Duchy of Lancaster.*

To complete this account of the equity business, must be added the equity cases of the County Courts, the inconsiderable equity business of the Stannaries Court, and the large equity business of the Palatine Court.

TABLE 32.—*Business of the Palatine Court.*

	Suits and Writs.
1891-92	770
'87-90	732
'83-86	748
'79-82	632
'75-78	437
'71-74	316
'67-70	241
'63-66	180
'59-62	153
Increase.....	+ 403'2 per cent.

The business of no other Court, except the City of London Court, has increased so rapidly as the Palatine Court. Its success is all the more remarkable in view of the failure of the County

²⁷ See "*Life of Lord Langdale*," i, pp. 350, 358, and 425.

²⁸ *Ibid.*, i, p. 424.

Courts to develop their equity business. What would be the result if a similar Court existed in Birmingham or Bristol?

VII.—*The Probate Court.*

The business of the Probate Court is for the most part automatic and administrative, and dependent on causes altogether different from those affecting that of other Courts. Of the administrative work I need only say that it has greatly increased since 1859. In the contentious work, on the other hand, is a distinct decline.

TABLE 33.—*Writs and Trials.*

	Writs and Claims.	Trials.
1891-92	220	99
'87-90	216	117
'83-86	204	107
'79-82	173	113
'75-78	265	94
'71-74	550	83
'67-70	534	67
'63-66	477	53
'59-62	403	48
Decrease or increase	-45'4 per cent.	+106'3 per cent.

Note.—The returns of writs in the Admiralty Division given at page x of the "Judicial Statistics," 1892, differ from those at page xxx; and a similar difference is to be found in the returns for many years back.

I have previously drawn attention to the fact that here trial by jury is on the decline. The percentage of trials by jury in 1892 was 22'1 per cent.; in 1891, 38'1; in 1890, 20'1 per cent.; while in 1876-79, 1880-83, and 1884-87 the percentages were 37'9, 32'5, and 24.

VIII.—*The Admiralty Court.*

It was to be expected that the business of the Admiralty Court would increase in a country which possesses the largest mercantile marine in the world. Every ship which enters or leaves an English port or nears our shores—every ship, in fact, which sails the high seas—may become the subject or occasion of a suit in that Court. The fact that entries and clearances at ports of the United Kingdom rose, within the period with which we are concerned, from about 59 million tons to more than 160 million tons, would prepare one for an augmentation of Admiralty litigation.²⁹ The actual figures, though large, do not come up to one's expectations.

²⁹ "Tonnage Statistics of the Decade," by Mr. Glover. *Journal of the Royal Statistical Society*, 1892, p. 205.

TABLE 34.—*Business of the Admiralty Court.*

	Writs and Actions.	Judgments and Decrees.	Number of Ships.	Tonnage.	Total Entries and Clearances (000's omitted).
1891-92	405	216	21,328 (1892)	8,644,754	(1890) 164,340,
'87-90	405	215	21,233 (1890)	7,945,871	....
'83-86	411	195	....	....	....
'79-82	354	181	25,185 (1880)	....	(1880) 133,250,
'75-78	355	178	....	....	....
'71-74	353	158	26,367 (1870)	5,690,789	(1870) 73,198,
'67-70	468	163	....	....	....
'63-66	534	178	27,663 (1860)	4,658,687	(1860) 58,707,
'59-62	520	179	....	....	....
Decrease or increase }	- 22'1	+ 20'6	- 22'9	+ 85'5	+ 179'9

The figures show a reduction in the number of writs and actions instituted, and an increase of judgments and decrees of about 20 per cent. The increase in the tonnage and clearances, it will be noted, is greater than the increase in the judgments and decrees.³⁰

To complete the statement of the Admiralty business, must be given the returns from the County Courts having Admiralty Jurisdiction, and the City of London Court:—

1891-92	552
'87-90	456
'83-86	465
'79-82	484
'75-78	553

IX.—*The Divorce Court.*

I have hesitated to include the returns of this Court. The cases which come before it differ so much from those in the other Courts, that there may be little good in grouping them together.

³⁰ As to increase of the business of the Court from 1851, see evidence of Mr. Rothery before Commission to inquire into expediency of bringing together all Superior Courts, 1860, p. 31. He states that in 1841 there were only two references and fifty-eight bills taxed by the Registrar. In an Appendix to Mr. Rothery's evidence, p. 32, is the following statement of actions entered from 1841 to 1858:—

1858	209	1849	256
'57	452	'48	259
'56	385	'47	243
'55	388	'46	227
'54	359	'45	256
'53	375	'44	175
'52	379	'43	257
'51	306	'42	230
'50	325	'41	237

This Court, too, would well merit a separate study. Here only a cursory glance at the subject is possible. And let me at the outset express regret that our statistics supply no information as to many points dealt with in the statistics of other countries. The French or German returns, for example, give details which render them profoundly instructive to the moralist and economist. Ours are almost useless by reason of omissions. They do not tell the status or profession or age of the parties to the suits, or the duration of their marriage; whether they are dwellers in towns or country, whether they are childless, or previously petitioners or respondents in the Court, or what were the grounds of the petitions. They are silent about most of the matters which make the French and Italian returns suggestive; and the omission is all the more to be regretted, because some of the details which we should prize could be obtained from a study of the petitions:—

TABLE 35.—*Business of the Divorce Court.**

	Divorce Petitions.	Petitions for Judicial Separation.	Nullity.	Restitution of Conjugal Rights.	Total Petitions.	Trials.
1891-92	531	98	9	14	699	953
'87-90	533	127	14	21	714	552
'83-86	492	122	14	21	662	452
'79-82	437	123	16	19	610	388
'75-78	425	117	12	20	592	356
'71-74	329	81	9	16	451	268
'67-70	247	77	7	14	361	227
'63-66	231	59	9	13	330	217
'59-62	202	60	3	11	300	234
Decrease or increase }	Per cent. + 162·8	Per cent. - 63·3	....	....	Per cent. + 133·0	Per cent. + 307·2

* See "Judicial Statistics, 1867," p. xxxiv, for return of decrees of judicial separation and dissolution of marriage. There are many discrepancies in the returns. It is pointed out by the Senior Registrar, in the return of suits instituted from 1888 to 1893, that in some few cases a petition for dissolution of marriage has been filed and a decree for judicial separation made, and that in some cases the respondents in their answers prayed for dissolution or judicial separation and obtained decrees.

To what extent is redress sought in this Court by men, to what extent by women? The saying is

Nach Freiheit strebt der Mann, das Weib nach Sitte.

How far is this principle verified by the records of this Court? In answering these questions some aid is given by a return made in 1888 at the instance of Mr. Gladstone, and a supplementary return of this year moved for by Mr. Henniker Heaton. Three

facts come clearly to light: greater proneness on the part of men than women to avail themselves of the remedy given by this Court; a tendency nevertheless for this difference to disappear; a marked preference by men for the remedy of dissolution of marriage as distinguished from judicial separation.³¹ These tendencies are all the more important because they agree with the experience of almost every country in which Divorce Courts exist.

TABLE 36.—*Husbands' Petitions.*

	Dissolution of Marriage.	Judicial Separation.
1891-92	306	3
'87-90	319	6
'83-86	311	6
'79-82	258	8
'75-78	259	11
'71-74	194	7
'67-70	139	8
'63-66	140	5
'59-62	123	2
Increase per cent.	+ 148·8	....

Wives' Petitions.

	Dissolution of Marriage.	Judicial Separation.
1891-92	222	150
'87-90	223	124
'83-86	212	119
'79-82	204	113
'75-78	188	110
'71-74	129	73
'67-70	107	69
'63-66	98	53
'59-62	69	52
Increase per cent.	+ 221·7	+ 190·0

The remarkable increase in the number of suits by women especially for dissolution of marriage, will be observed. In what degree are husbands' suits, in what degree wives' suits, successful? The answer is given in these tables:—

³¹ "A mesure qu'augmentait le nombre des demandes en divorce, celui des demandes ayant pour but la séparation de corps diminuait."—"L'Administration de Justice Civile en France, 1890," p. xii.

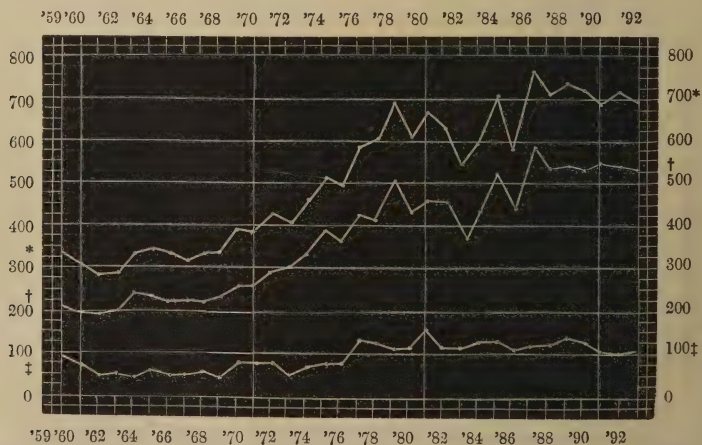
TABLE 37.—*Suits for Dissolution of Marriage.*
(HUSBANDS' UNSUCCESSFUL SUITS.)

	Percentage of Suits Dismissed.
1891-93.....	13'1
'87-90.....	8'6
'83-86.....	14'6
'79-82.....	8'6
'75-78.....	8'6
'71-74.....	10'9
'67-70.....	13'7
'63-66.....	14'7
'59-62.....	9'7
Increase	<u>+ 3'4</u>

(WIVES' UNSUCCESSFUL SUITS.)

	Percentage.
1891-93.....	8'8
'87-90.....	5'4
'83-86.....	10'0
'79-82.....	4'5
'75-78.....	4'5
'71-74.....	5'2
'67-70.....	8'0
'63-66.....	11'8
'59-92.....	7'5
Increase	<u>+ 1'3</u>

Perhaps a difference in the results of the two classes of suits was to be expected. But the contrast revealed by these figures is remarkable. Do they signify that the petitions of wives are as a rule better founded, or more often undefended or collusive, than those of men? Do they indicate that women are reluctant to bring such suits unless they have a very good case and are tolerably certain of success?



* Petitions of all kinds. † Petitions for Dissolution of Marriage. ‡ Petitions for Judicial Separations.

The diagram of the progress of the business of the Divorce Court from year to year shows on the whole a steady advance. Petitions for judicial separations have for some periods been stationary, with a tendency in recent years to decline. Petitions for divorce have risen in certain years by leaps and bounds. Investigators into moral statistics have hitherto generally insisted upon their uniformity and constancy, and the late Mr. Buckle, writing under the influence of an original thinker and investigator, M. Quetelet, popularised the idea that statistics proved the existence of a sort of fatalism in moral and social phenomena. The individual counted for little: so many people annually died of hunger, so many suicides took place, so many letters were misdirected or misdelivered, according to a regular and constant sequence. Speaking with diffidence on a subject in which I am not versed, it seems to me there is more cause for marvel at the variations from time to time shown by moral statistics. Certainly the figures above cited—especially the sudden rises in the number of petitions in certain years—point to no slow and gradual transition; they rather suggest cracks and ruptures occurring from time to time in the moral structure of society. Subjected to heat or pressure, a material yields or expands up to a certain point, according to one regular rate. Beyond that point it obeys a new law; the elasticity becomes greater, the rate of expansion more rapid. Some such change is, it seems to me, revealed in these figures.

X.—*Total Business of Superior Courts.*

We can now sum up the entire business begun in the Superior Courts (Queen's Bench Division, Chancery, Admiralty, Probate and Divorce).

TABLE 38.—*Cases Begun in Superior Courts.*

	Cases Begun.	Rate of Decrease or Increase.	Population.
1891-92	81,315	+ 1'0	(1891) 29,010,018
'87-90	80,480	— 4'7	
'83-86	84,517	— 12'6	
'79-82	96,775	— 7'9	(1881) 25,974,439
'75-78	89,675	+ 26'3	(1871) 22,712,266
'71-74	70,977	— 25'9	
'67-70	95,895	— 20'7	
'63-66	120,839	+ 15'6	(1861) 20,066,224
'59-62	104,529	....
Decrease or increase } per cent. }	— 22'2	....	+ 44'02

The effect may be thus expressed: in 1859-62 one case was begun in the Superior Courts for every 190 inhabitants; in 1891-92, one case for every 350.

INFERIOR COURTS.

XI.—*The County Courts.*

Before the present County Courts were established, there existed, all over England, a large number of inferior courts. There were the old County Courts, the descendants of the Tribal Courts or Folk Motes, with jurisdiction up to 40s. There were the Hundred Courts, and the Courts Baron, the jurisdiction of which was very limited as to amount, unless where Parliament had extended it. Another group of local Courts existed by prescription or grant: one of the most important being the Palace Court of Westminster, possessed of jurisdiction unlimited as to amount within 12 miles of the Palace. Many cities—for example London, Bristol, Liverpool, Newark—had acquired, by charter or prescription, Courts of their own.

The centralisation of legal business in England just before the County Courts were created was not of ancient date. The intention of the Statute of Gloucester (6 Edward I, cap. 8) was that the local Courts should have jurisdiction in all but important matters. "None," it was enacted, "shall have writs of trespass before Justices, unless he swears that the goods taken were worth 40s. "at the least," and as 40s. was in those days the equivalent of a large sum, the result would be to keep in the local Courts the bulk of disputes.³²

In many cities were established Courts of Request or Conscience. They were intended to do justice in a rough and ready way. Their Judges or Commissioners were laymen, who were free to disregard the rules of evidence. These Courts were the objects of much hostility on the part of lawyers. Blackstone speaks of their jurisdiction as "a petty tyranny" exercised by "a set of standing Commissioners." The law administered by them may have been not of a high quality. But, as a rule, they decided promptly and cheaply; and undoubtedly when a vigorous high-minded man guided them, they were useful.³³ The history of the Court of Requests at Birmingham, where Mr. William Hutton was a Judge, shows that some of the local Courts

³² See Brougham's "Speech on Local Courts," 2, 503.

³³ "I know these Judges in the Court of Requests do good—I say they do good by comparison—better something of justice than nothing; but so precious a thing is justice, that I should rather have such slovenly justice than absolute peremptory, and inflexible denial of all justice. It happens that tradesmen, who know nothing of law, and who may not have much occupation in their own business, preside in these Courts of Request, and administer justice as well as might be expected—I say it is better to have these than none."—Brougham's "Speech," 2, 511.

flourished and deserved to do so.³⁴ In the County Court of Doncaster, for example, about 9,000 suits were annually commenced. But some of these Courts were in a state of decay, and in their procedure were many defects, thus described by the Commissioners on Courts of Common Law:—

“That their jurisdiction is in general too limited in point of amount and local extent; that suits are frequently removable into the higher Courts without security; the want of competent judges and juries; the want of efficient inferior ministers to serve and execute process; the want of sufficient and simple process to compel an appearance; the use of complicated and expensive pleadings; the distance of the place of trial from the residences of the parties and witnesses; the want of sufficient means to compel the attendance of witnesses; delay; the facility of evading execution; the abuses occasioned by entrusting the execution of process to improper agents, for whose misconduct no superior is responsible; the want of appeal; the expense of the proceedings as compared with the amount of the demand.”—“Fifth Report of Commissioners on Courts of Common Law,” 1833, p. 5.

The first County Court Act (9 and 10 Vict., cap. 95) was passed in 1846. By successive Acts the jurisdiction of the County Courts, though still capriciously restricted,³⁵ has been enlarged; and they now possess an importance which was never expected by their authors. The following table shows the average number of plaints since 1859-62:—

TABLE 39.—Average Plaints.

	Plaints.	Population.
1891-92	1,050,150	(1891) 29,001,018
'87-90	1,025,411	
'83-86	954,528	
'79-82	1,049,205	(1881) 25,974,439
'75-78	971,543	
'71-74	887,404	(1871) 22,712,266
'67-70	942,548	
'63-66	798,316	
'59-62	812,063	(1861) 20,066,224
Increase per cent.	+ 28·9	+ 44·02

The maximum number of plaints—1,095,869—was entered in 1886. The maximum amount—1,681,865*l.*—was recovered in the same year. In 1892 the amount recovered was 1,643,825*l.*

Originally intended “for the more easy recovery of small debts “and demands,” the County Courts, notwithstanding the increase in their jurisdiction, are still resorted to chiefly for very small

³⁴ See his “Courts of Requests, their Nature, Utility, and Powers Described.” Birmingham, 1787. Hutton states (p. 11), that in the fifteen years he sat the average business was one hundred and thirty causes a week.

³⁵ See article by Judge Chalmers in “Law Quarterly,” 1889, and letter in “Times,” 27th March, 1894.

cases; in fact, the average for each plaint entered is not so much as it once was, as is apparent from the following table:—

Average Sum for which Plaints are Issued.

	£	s.	d.		£	s.	d.
1892.....	2	19	1	1878.....	3	4	9
'91.....	2	17	7	'77.....	3	4	11
'90.....	2	17	9	'76.....	3	6	6
'89.....	2	16	10	'69.....	2	16	4
'88.....	2	17	11	'59.....	2	9	1
'87.....	2	18	8	'49.....	3	3	—
'79.....	3	4	8				

The percentage of cases over 20*l.*, which was about 1·2 in 1879-82 and 1883-86, had fallen, in 1887-90, to 1·1 per cent. The apprehension that these courts have ceased or are ceasing to be suitable for small disputes seems unfounded. On the other hand, it is fair to note that the cases above 50*l.* entered by consent have greatly risen—a fact speaking well for the confidence reposed in the courts. In 1870 the number of such actions was only 43; in 1890 it was 800; in 1891, 870; in 1892, 936.

TABLE 40.—*Plaints above 50*l.*, &c.*

	Plaints above 20 <i>l.</i> and not Exceeding 50 <i>l.</i>	By Agreement above 50 <i>l.</i>
1891-92	11,912	903
'87-90	11,113	748
'83-86	12,104	645
'79-82	13,434	294
'75-78	16,880	251
'71-74	14,506	29

Note.—With reference to the 936 County Court plaintiffs above 50*l.* in 1892, a correspondent of the “Times” (27th March, 1894) writes:—

“It is interesting to note the venue of the 936 County Court plaintiffs. On tracing them through the pages of the return, I find they may be grouped thus:—

*“County Court Actions entered for Amounts exceeding 50*l.**

In the Metropolitan County Courts.....	167
In those of eight large centres of population and industry, viz., Liverpool, Manchester, Leeds, New- castle, Birmingham, Bristol, Cardiff, Swansea	274
In the County Courts held at fifty-one ‘Assize towns’....	59
In local centres other than the foregoing	436
	<u>936</u>

“It will thus be seen that nearly one-half of the ‘unlimited’ and ‘original’ jurisdiction of the County Courts is administered, not in the Metropolitan County Courts (such as Westminster, Marylebone, Shoreditch, Whitechapel, &c.), not in the great industrial and commercial centres, and certainly not in the towns consecrated to the antique and moribund Assize system, but in localities where the inhabitants have become enlightened enough to recognise the fact that litigation, like charity, may just as well begin at home, and where local groups of highly-trained and competent solicitors are at hand and are ready to give practical effect to that view.”

One cannot lose sight of the fact that nearly as many actions are remitted from the High Court to be tried in the County Courts as are tried in the High Courts in London and Middlesex and at Assizes.

Actions Remitted.

1891-92	2,264	1871-74	613
'87-90	1,412	'67-70	492
'83-86	923	'63-66	152
'79-82	899	'59-62	80
'75-78	705		

Many complaints are made of the inordinate amount of the fees in the County Courts. They appear to be well founded. In 1890 the fees amounted to about 27·9 per cent., in 1892 to 27·5 per cent. of the amount obtained by judgment. It is but right to say that solicitors are much more blamed than they ought to be for the costliness of proceedings in the County Courts. The fees annually amount to nearly three times as much as the costs properly so called, which were in 1891 only 136,964*l.*, and in 1892 146,073*l.* Some of the fees have a fine unreformed look not often to be seen in these days. A sues in the “Poor Man’s Court” for about 20*l.*; he may have to about pay 1*l.* on the plaint note before the Court will look at him. B sues in the Superior Courts for a quarter of a million; he pays at the outset only 10*s.* To escape what seems to A an unfair payment, he seeks to recover some small amount in the Superior Courts, where he may be punished for so doing by getting no costs even if he succeeds. It would be interesting to learn the exact profit which the State has made out of the County Courts. It has been estimated at 50,000*l.* to 60,000*l.*;³⁶ but this is not borne out by the published figures.

The County Courts have large equity jurisdiction; but, as already stated, this part of their business does not grow rapidly, and remains very much what it was twenty years ago.

TABLE 41.—*Equity Plaints.*

1891-92	747
'87-90	762
'83-86	699
'79-82	688
'75-78	671
'71-74	732
Increase	2·05 per cent.

³⁶ In 1893 the County Courts are debited with an expenditure of 438,529*l.*

Besides the County Courts, still survive a number of local Courts. Though the County Courts Act of 1846 provided for their gradual extinction, some continue to exercise a feeble and dwindling jurisdiction. Their decay began long ago. Harrison, in his description of England, says:—

“Albeit the princes heretofore reigning in this land have erected sundry Courts especially of the Chancery at York and Ludlow, for the ease of poor men dwelling in those parts, yet will the poorest (of all men commonly most contentious) refuse to have his cause heard so near his home, but endeavoureth rather, to his utter undoing, to travel up to London, thinking there soonest to prevail against his adversary, though his case be never so doubtful. But in this toy our Welshmen do exceed of all that ever I heard; for you shall here and there have some one or other poor David of them given so much to contention and strife that, without all respect of charges, he will up to London, though he go barelegged by the way, and carry his hosen on his neck (to save their feet from wearing) because he hath no change. When he cometh there also, he will make such importunate begging of his countrymen, and hard shift otherwise, that he will sometimes carry down six or seven writs with him in his purse, wherewith to molest his neighbour, though the greatest quarrel be scarcely worth the fee he has paid for any one of them.” (Book 2, c. 9.)

In a few of the local Courts, and in particular the Lord Mayor's Court and the Salford Hundred Court, is transacted a large amount of business. Very remarkable has been the increase of plaints in the City of London Court. In twenty years they have more than doubled. They were 12,578 in 1870, and in 1892 32,382. Scarcely less striking is the development of the business of the Salford Hundred Court, which rose in the same period from 7,950 to 13,654.

Of the Stannaries Courts, which possess in Cornwall and Devon common law and equity jurisdiction, I need only say that there is a considerable decline since 1859: the average for many years has not been more than 12 or 14 writs and plaints.

XII.—*The Ecclesiastical Courts.*

The Ecclesiastical Courts are in a state of atrophy. They are a mere shadow of their former selves,³⁷ and many kinds of suits, though still possible, have become practically extinct. Still there has been of late, in these days of church building and church restoration, a considerable increase in applications for faculties.

³⁷ In Archdeacon Hale's *Precedents*, it is stated that from Christmas, 1496, to Christmas, 1500, 1,854 persons were cited before the Court of Commissary, whose jurisdiction was limited to the city of London and a small part of Essex and Hertfordshire. Quoted in Stephen's "*History of the Criminal Law of England*," vol. 2, p. 403.

TABLE 42.—*Ecclesiastical Suits.*

	Ecclesiastical Suits.	Suits for Faculties.
1891-92	92	430
'87-90	92	343
'83-86	18	283
'79-82	10	279
'75-78	17	298
'71-74	10	196
'67-70	21	172
'63-66	19	103
'59-62	35	85

XIII.—*Total of Cases in Superior and Inferior Courts.*

The next table gives a summary of the total number of cases begun in the Inferior Courts.³⁸ The second gives the total for all Courts, superior and inferior.

TABLE 43.

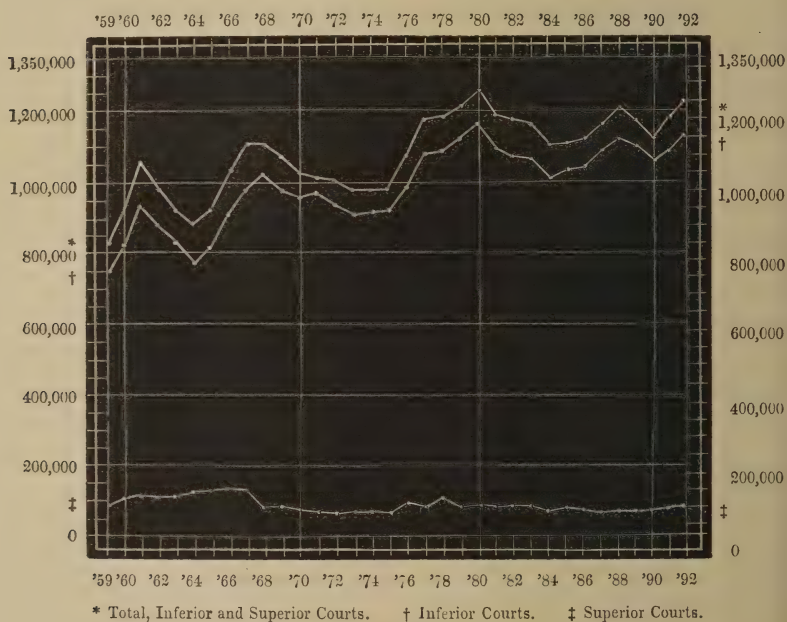
	Inferior Courts.	Decrease or Increase.	Population.
		Percentage.	
1891-92	1,115,374	+ 2'4	(1891) 29,001,018
'87-90	1,089,530	+ 4'9	
'83-86	1,038,592	— 6'6	
'79-82	1,111,994	+ 9'1	(1881) 25,974,439
'75-78	1,019,234	+ 9'09	
'71-74	934,305	— 4'9	(1871) 22,712,266
'67-70	983,242	+ 18'1	
'63-66	832,174	— 1'2	
'59-62	842,285	....	(1861) 20,066,224
Increase per cent.	+ 32'4	....	+ 44'02

	Cases in Superior and Inferior Courts.	Decrease or Increase.	Population.
		Percentage.	
1891-92	1,196,689	+ 2'3	(1891) 29,001,018
'87-90	1,170,010	+ 4'1	
'83-86	1,123,109	— 7'1	(1881) 25,974,439
'79-82	1,208,770	+ 9'0	
'75-78	1,108,907	+ 10'3	(1871) 22,712,266
'71-74	1,005,283	— 6'9	
'67-70	1,079,162	+ 13'2	
'63-66	953,014	+ 0'6	(1861) 20,066,224
'59-62	946,812	....
Increase per cent.	+ 26'4	....	+ 44'02

³⁸ A few unimportant discrepancies in the figures in the official returns I have failed to clear up.

TABLE 43—*Contd.*
Rate of Decrease or Increase per Cent.

		Superior Courts.	Inferior Courts.
1887-90 and 1891-92.....		+ 1'0	+ 2'4
'83-86 " '87-90.....		- 4'7	+ 4'9
'79-82 " '83-86.....		- 12'6	- 6'6
'75-78 " '79-82.....		+ 7'9	+ 9'1
'71-74 " '75-78.....		+ 26'3	+ 9'09
'67-70 " '71-74.....		- 25'9	- 4'9
'63-66 " '67-70.....		- 20'6	+ 18'1
'59-62 " '63-66.....		+ 15'6	- 1'2



It thus appears that the total number of cases for every 1,000 people in England and Wales was in 1859-62 about 46, in 1891-92 about 41. It would be interesting to range all countries of Europe according to the degree in which litigation or "*processivité*" prevails among them. The necessary data, however, for such a classification are not readily procurable. Any comparison is apt to be vitiated by the fact that the boundaries between civil and criminal proceedings are not under all systems of law drawn alike. But it is safe to say that statistics show in this respect differences between countries and parts of the same country too great to be explained by differences in legal systems. In Scotland in 1891-92

the number per 1,000 inhabitants was about 23. In Germany it was in 1891 about 74;³⁹ in Italy, 67.⁴⁰

Several systems of judicial statistics record the local origin of suits, and they concur in showing that the poorer and more backward a district, the more litigation abounds in it. In the mountainous districts and among the more ignorant peasantry of France is the highest percentage of suits.⁴¹

In mentioning the differences in this respect between the various regions of Italy, the official report for 1891 observes: "While in northern Italy there are 37 *liti* for every 1,000 inhabitants, and in the centre about one-third more, in Naples and Sicily there are three times, and in Sardinia little less than four times as many." The law suit has taken the place of the *vendetta*, the plaint note is the substitute for the knife or the wild justice of revenge. Sir Henry Maine has pointed out that one of the first effects of the establishment of English rule in India is to swell the work of the Courts. "Even in our day, when a wild province is annexed to the British Indian Empire, there is a most curious and instructive rush of suitors to the Courts which are immediately established. The arm of the law summarily suppresses violence, and the men, who can no longer fight, go to law instead."⁴²

After the rebellion of 1745 no class brought more grist to the legal mill at Edinburgh than the Highland chiefs, who were compelled to abandon their old habits of petty warfare. They put aside their broadswords, and crossed the hills, not to carry off their foemen's cows, but to consult a Writer to the Signet or Advocate in Edinburgh about the construction of an ancient charter or the legal bearings of a modern quarrel. Had we statistics akin to those to be found in the French, German and Italian returns, it would doubtless appear that in districts where life is flat and monotonous and time hangs heavy on people's hands, litigation most abounds. A little more variety in occupations, wider interests, and harmless recreations—perhaps a parish council, perhaps a circus—might work a great change.

And this brings us to the further question: on what causes does the volume of litigation depend? The figures show no regular movement. They record sharp oscillations. They indicate, not the presence of steadily operating forces, but the occasional intervention of forces suddenly raising or depressing the average. What are these forces? To attempt to answer this question let us glance at the periods of expansion and contraction.

³⁹ "Deutsche-Justiz Statistik, 1893," p. 131.

⁴⁰ "Statistica Giudiziaria Civile, 1893," p. 111.

⁴¹ M. Tarde's "Criminalité Comparée," p. 101.

⁴² "Ancient Institutions," p. 289.

1859-62, 1863-66. Legal business, on the whole, increased, especially in the Inferior Courts. This was a period of upward movement in prices, with high marriage-rates, low price of wheat, and many signs of prosperity.

1867-70. In 1866-67 there was an extraordinary expansion of legal business; for the next two years a no less remarkable fall. In 1866 was issued the largest number of writs in the Queen's Bench (133,160); in 1870 they had fallen to 81,778. This period includes the depression following the crisis of 1866.⁴³

1871-74. There was a low level of legal business. The writs on the Common Law side reached, in 1873, one of the lowest points (63,926) they have ever reached; and there was a downward tendency in the business of the Inferior Courts. 1873 covers the Berlin, Vienna, and New York panics, and a time when money touched 9 per cent. in London. But on the whole 1870-74 was a period of prosperity.

1875-78. Legal business began to increase in 1873, and went on increasing. In the Queen's Bench, Chancery, and Inferior Courts there was a marked expansion.⁴⁴ And yet this was, on the whole, a period of commercial and industrial distress all over the world; a period of liquidation and contraction of credit, and diminished exports and imports; a period which witnessed the Collie failure, collapses and defaults in foreign debts, and the City of Glasgow Bank failure.⁴⁵

1879-82. Legal business slightly increased. In the Irish Courts there was in 1880 and 1881 an "extraordinary increase" of writs. This was, on the whole, at all events in England, a period of commercial revival and prosperity. 1880 was a year of large exports and imports and brisk profitable trade.

1883-86. In this period was a falling off both in the work of the High Court and the Inferior Courts. It was also, on the whole, a period of low profits, diminished exports and imports.

1887-90. This also was a period of stagnation in the work of the Courts, and, on the whole, of commercial depression.

A fair inference to be drawn from these figures is that litigation, as a rule, expands with the growth of trade. In 1846, when

⁴³ The largest number of bankruptcies, assignments, or liquidations and compositions—17,240—was in 1868. The average for 1865-69 was 15,061. Appendix to "First Report of Commission on Depression of Trade," p. 173.

⁴⁴ A similar increase took place in Scotland, "Judicial Returns for 1880," pp. 72 and 73.

⁴⁵ The depression above referred to dates from about the year 1875, and, with the exception of a short period of prosperity enjoyed by certain branches of trade in the years 1880 to 1883, it has proceeded with tolerable uniformity, and has affected the trade and industry of the country generally, but more especially those branches which are connected with agriculture.—"Final Report of Commission on "Depression of Trade," p. x.

new railways were being planned and carried out on a large scale, about 24,000 more writs were issued than in the year before. But, as the experience of 1875-78 shows, such expansion may come with a contraction of trade and credit, and diminution of security and confidence; and, indeed, an inflation of litigation would seem to be a regular sequel to commercial crises. The largest amount of writs ever issued within the period considered in this paper was in 1866 (133,160). This is, on the whole, the experience of other countries. The official editor of the German returns⁴⁶ remarks that "the great changes in litigation take place in regard to suits respecting contracts, which form the great majority of actions. This may be the result of an increase in the number of contracts and an extension of credit, but it may be the outcome of a change for the worse in the position of debtors generally. And so good as well as bad times may give rise to an increase of litigation." I may add that the course of litigation since 1859 in France, Germany, and Italy, has, in the main, resembled that followed in England.

Vicissitudes in trade are not, however, the whole explanation of these fluctuations. I am inclined to think that moral changes tending to diminish litigation are almost everywhere going on. In the comedies of the seventeenth and eighteenth centuries is no more popular figure than the haunter of courts, the man who is always dabbling in law. The characters in Racine's "Pleaders," "Widow Blackacre" in Wycherley's "Plain Dealer," and the inn-keeper in "The Antiquary," who felt a pride in "Hutchinson v. Mackitchinson," "a ganging plea that my father left me, and his father afore left to him," are examples of a class once large. The passion for litigation is the motive of an endless number of comedies, a favourite text of moralists and satirists. To-day such a theme would be somewhat pointless. The dramatist who adopted it would be deemed old fashioned. The passion is rare, the character satirised is becoming extinct. When we meet the perpetual litigant in these days he is generally found to be a half-witted dupe or a monster of egotism and vanity. Elsewhere and otherwise, are gratified passions which once revelled in law suits, which carried them from court to court and transmitted them from generation to generation. In every country is growing up a disbelief in the power of the best constituted courts of law to give to a litigant full money value for what he spends and risks and suffers. An Italian jurist⁴⁷ speaks of "the positivism of our time, which esteems compromises and arrangements preferable to the uncertainty of litigation"—that is, rarely thinks it good

⁴⁶ "Justiz-Statistik, 1893," p. 107.

⁴⁷ "Annali di Statistica," 1885, p. 163.

business to go to law. I know a firm the founders of which never hesitated about suing debtors, and the present members of which systematically refrain from doing so. The former issued a writ, where the latter merely close an account. This is only an example of a change everywhere taking place.⁴⁸

A second point which comes to light in the above figures is the tendency to prefer Inferior Courts with their simple procedure. This is in harmony with the experience of most countries. M. Garsonnet in his "Manual of Procedure" draws attention to the growing disuse of the ordinary procedure in France, and predicts that it will be superseded by summary procedure; and the figures above quoted as to the growth of the business of the Inferior Courts tell of the preference in this country for tribunals in which procedure is prompt and cheap. In 1859-62 the cases begun in the Superior Courts were about one-ninth of those begun in Inferior Courts; in 1891-92 they were about one-fourteenth to one-fifteenth.

Crime and litigation are, it has been suggested, so closely connected, that there must be similar fluctuations in both. Civil litigation, it has been said, is "*forma attenuata di attività criminosa*," or, as Sir Henry Maine expresses the idea, "the same natural impulse is gratified" by litigation as by savage warfare, and, "hasty appeals to a judge succeed hurried quarrels, and hereditary law suits take the place of ancestral blood feuds." It is impossible here to deal adequately with this question—the synchronism of crime and litigation—which well deserves to be studied. Only this much may be said in passing: the curves describing the fluctuations in certain forms of contentious business closely resemble the curves descriptive of certain crimes, and the curve traced by the figures of litigation in all our Courts from year to year, is not unlike the curve to be found in prison statistics descriptive of all forms of crime. Nor will this surprise anyone who knows how capricious are the divisions between many parts of Civil and Criminal Law, how often law suits have an origin similar to that of many crimes, and how much of an accident it may sometimes be whether a dispute will end in the Central Criminal Court or the Royal Courts of Justice.

XIV.—*Appellate Courts.*

One peculiarity of English law is the multiplicity of appeals which it allows. Under no other legal system, so far as I am aware, is it possible for a litigant to take his adversaries to three

⁴⁸ See Arnold's "*Cultur und Rechtsleben*," p. 279.

or four Courts in succession. In this respect since the Judicature Acts there is a change. At Common Law there were no appeals, properly speaking, in regard to interlocutory orders. Error could be brought only upon matters appearing upon the record. Between Equity and Common Law existed a difference in this respect. In the former every order was appealable: no matter of what importance, it could be carried to the House of Lords.

Unfortunately, as it seems to me, this rule of Equity was imported into the Judicature Acts without the qualification which the Judicature Commissioners suggested (First Report, p. 24). Unfortunately, too, has sprung up the practice of giving a successful appellant costs, not merely in the Court above, but in the Court below. The result appears in the following figures. And first as to appeals to the House of Lords:—

TABLE 44.—*Appeals to House of Lords.*

	Appeals, Error, Presented.	Judgments Delivered.	Affirmed (including Affirmation with Variations).	Reversed (including Reversal in part).
1891-92.....	34	37	29	7
'87-90.....	48	33	21	12
'83-86.....	35	25	18	7
'79-82.....	37	23	19	4
'75-78.....	31	27	17	8
'71-74.....	27	19	14	5
'67-70.....	26	16	12	3
'63-66.....	25	17	12	5
'59-62.....	30	19	13	6
Increase per cent.	+ 13'3	+ 95	....	....

Two reflections will probably occur to most persons. One will be as to the small number of appeals presented and heard; they do not much exceed the average number of appeals and writs of error (total 291) presented in 1813-23. They do not equal the number of appeals and writs of error presented in 1795, 1796, and 1797, the numbers in which were 41, 40, and 51.⁴⁹ Another reflection will be as to the variety in the percentages of reversals. The three periods in which a decision, the subject of appeal, was most in jeopardy were 1859-62, 1875-78, and 1887-90. What do the great differences from time to time signify either as to the composition of the House of Lords or the Courts whose decisions are reversed? To those conversant with the statistics of former years a third reflection will occur. The percentage of cases heard to cases presented is higher than it was, and is increasing; the

⁴⁹ "Bentham's Works," vol. v, Table VII.

evil denounced by Bentham of sham appeals fostered by the practice of staying execution in the case of writs of error, and intended chiefly as menaces and annoyances, is less than it was. In this part of litigation, as in some others, is more reality.

Dealing next with the business of the Court of Appeal, it is desirable to separate the appeals on the Chancery side from the Common Law appeals.

TABLE 45.—(a.) *Chancery Appeals.*

	Final Appeals.		Interlocutory Appeals.	
	Set Down.	Heard.	Set Down.	Heard.
1891-92	143	135	81	75
'88-90	163	149	84	71
'85-87	181	182	139	134
'82-84	211	119	151	136
'79-81	112	95	149	130
'76-78	143	105	114	101
Decrease or increase } per cent. ....	...	+ 28·5	— 28·8	— 25·7

(b.) *Queen's Bench Appeals.*

	Final Appeals.		Interlocutory Appeals.	
	Set Down.	Heard.	Set Down.	Heard.
1891-92	175	144	116	107
'88-90	151	129	144	134
'85-87	159	141	159	138
'82-84	160	118	149	139
'79-81	138	127	107	89
'76-78	177	126	55	48
Decrease or increase } per cent.	— 1·7	+ 14·2	+ 110	+ 123

(c.) *Total Appeals.*

	Final Appeals.		Interlocutory Appeals.	
	Set Down.	Heard.	Set Down.	Heard.
1891-92	336	298	220	200
'88-90	334	296	245	225
'85-87	362	344	312	292
'82-84	403	255	325	290
'79-81	266	235	263	224
'76-78	349	251	172	152
Decrease or increase } per cent.	— 3·7	+ 17·3	+ 28	+ 31·5

Looking at these figures⁵⁰ one sees—

(a.) The small increase in the number of final appeals.

⁵⁰ See also "Judicial Statistics," 1867, p. iii.

(b.) The great increase in the interlocutory appeals in the Queen's Bench, and their remarkable increase after the Judicature Acts. It is curious that, while in the Chancery Division there is a considerable decline in the interlocutory appeals, those in the other Division have considerably increased. It is also to be observed that they form a larger proportion of the whole number of appeals in the Queen's Bench than in the Chancery.

In recent years, for some reasons which I cannot tell, the results of the appeals to the Court of Appeal are no longer given; but I should be surprised if the reversals much exceeded or fell short of a fourth to a third. In regard to one class of cases—appeals from the Admiralty to the Court of Appeal, and appeals from inferior Courts to the Admiralty—the percentage is higher. This is explained no doubt by the large powers of the Court of Appeal as to drawing inferences, and the extent to which these cases turn on obscure facts seen in different lights by different minds.

Appeals from Admiralty Decrees.

	Affirmed.	Reversed.
1891-92	9	3
'88-90	12	4
'85-87	13	4
'82-84	10	6
'79-81	6	8
'76-78	12	5

Appeals from Inferior Courts to Admiralty.

	Affirmed.	Reversed.
1891-92	5	6
'88-90	3	4
'85-87	4	2
'82-84	4	4

I have already referred to the diminution of the motions for new trials since Mr. Finlay's Act (53 & 54 Vict., c. 44) was passed. No more important change in procedure has taken place in recent times than that recorded in these figures as to motions for new trials.

TABLE 46.—*Motions for New Trials.*

1891-92	144	1867-70	594
'87-90	102	'63-66	575
'83-86	429	'59-62	562
'79-82	437		
'75-78	418	Decrease	-76 pr. cent.
'71-74	581		

The changes may be thus expressed: In 1859-62 there was approximately one motion for a new trial for about every four cases tried; in fact it is scarcely too much to say that every verdict of a jury was by some lawyers regarded as *prima facie* proper to be reviewed. In 1892 there was one such motion for about every twenty.

XV.—*The Strength of the Legal Profession.*

Having endeavoured to ascertain the amount of the litigious work of the different Courts, it may be of interest to mention a few facts as to the changes in the number of persons conducting the work of litigation. Time does not permit a statement as to the changes in the number of judges and judicial officials since 1859; but from the census returns have been taken a few figures as to the number of barristers and solicitors, and other members of the legal profession, in England and Wales:—

	Barristers and Solicitors.	Law Clerks, &c.	Total Legal Profession.	Population.
1891.....	19,978	27,540	47,518	....
'81.....	17,386	24,602	43,641	....
'71.....	15,894	18,886	37,327	....
'61.....	14,557	16,605	34,991	....
Increase per cent.	+ 37·2	+ 65·9	+ 35·8	+ 44·02

Making allowance for the fact that the returns for 1861, 1871, and 1881, include law students and others, not included in the returns for 1891, the real increase in the legal profession is about 50 per cent. I may add that in Scotland during the same period the ranks of the legal profession increased 44·6 per cent., while in Ireland the increase was only 2·2 per cent.

It is of course impossible to ascertain what proportion of the barristers whose names appear in the "Law List" actually practise. But the solicitors engaged in the practice of their profession may be assumed to be equal to the number taking out stamped certificates.

By the kindness of the authorities at Somerset House I am enabled to give these details:—

	London Certificates.	Country Certificates.	Total.
1893.....	5,408	9,681	15,089
'60.....	3,393	6,837	10,230
'59.....	3,419	6,848	10,267
Increase per cent.	+ 58·1	+ 41·3	+ 47

One must be on one's guard against drawing plausible but false deductions from these figures. It is not a necessary inference that there are more hands to perform less work; one must not lose sight of the fact, known to all lawyers, that contentious matters form only a small part of their business. Still it is remarkable that, while writs have diminished in the manner already described, the ranks of the whole legal profession should have increased in about thirty years by 50 per cent., and that in London in the same period the number of solicitors has increased by 58 per cent.⁵¹

XVI.—*Conclusion. Suggestions as to Legal Statistics.*

Upon one point, and that not the least important, I can only touch. One of the chief objects which I have had in view is to endeavour to help to bring about an improvement in the statistics of litigation. It must not be supposed that in saying so I criticise those who are responsible for the preparation of the present returns; their work is done from year to year with care and accuracy, as I, who have no doubt made many mistakes in this paper, freely own. The defects which I desire to remove are due to the perpetua-

⁵¹ "In 1827 the number of London attorneys and solicitors was 2,371; it is now (1850) upwards of 3,200. In the same year the number of country solicitors and attorneys was 4,796; it is now upwards of 6,900."—"Cooper's Chancery Miscellanies," No. 1, p. 1. "In the same period of time the bar has multiplied in a still larger ratio. In 1827 the number of barristers was 966; at present it is upwards of 3,250." The same writer gives the following further information as to the "number of barristers, London and country attorneys and solicitors, King's sergeants, King's counsel, sergeants-at-law, and counsel on the different circuits in the year 1783:"—

Number of barristers	301
" attorneys and solicitors in London, West- minster, Borough of Southwark, and their environs }	1,262
Number of country solicitors and attorneys	2,695
	<hr/>
	3,957
	<hr/>
Number of counsel, London and country attorneys and solicitors, Queen's counsel, sergeants-at-law, and counsel on the different circuits in the year 1850 :—	
Number of counsel, special pleaders and conveyancers at the Bar	} 3,253
Number of certificated special pleaders and conveyancers not at the Bar	
	108
	<hr/>
	3,361
	<hr/>
Number of attorneys and solicitors residing in London, Westminster, and the Borough of Southwark, or their environs.....	} 3,209
Number of attorneys and solicitors, notaries, &c., residing in the cities, boroughs, market towns, and principal villages in England and Wales	
	6,906
	<hr/>
	10,115
	<hr/>
—"Chancery Miscellanies," 3, p. 44.	

tion of a system settled in 1859, when the framers had not the examples of several other countries to guide them—a system then intended to be only provisional. The weakness of the present plan is that it is no plan at all; it is not the outcome of careful consideration of present essentials. Each Court has made returns too much in its own way. The consequence is that there are needless differences, needless repetitions; that we get what we do not want, and do not get what we do want. What is to be gained from the information every year recorded of the amount of claims submitted for assessment to the Admiralty Registrar assisted by merchants? The figures we know are somewhat arbitrary, filled in very much at random. Who wishes to learn the precise number of affidavits filed in the Central Office? This can be useful only as a check on the amount of fees. Why should accurate information be given as to affirmations and reversals of decisions in the House of Lords, and nothing be told as to the results in the Court of Appeal? Why should there be no statistics as to suits *in formâ pauperis*, and only meagre information as to the results of executions? Why should there be no returns as to the cases tried in each Assize town? Few things are more tantalizing in a statistical inquiry than returns for certain years based upon one principle, followed by others based upon another. Why have such changes been repeatedly made since 1859? I might multiply such questions. Here I will only suggest that there should be sketched, with the assistance of lawyers, and with the French, German, and Italian statistics as models, a plan to which, so far as possible, the returns of all courts should conform. Such returns would be silent about some things now recorded, but they would show us clearly the following points:—

- (a.) The judicial strength of each court, and the number of its officers;
- (b.) The revenue derived from fees and otherwise of each court;
- (c.) The population within the circuits or jurisdiction of each court with limited or local jurisdiction;
- (d.) The business of each court for the year and the fluctuations from year to year;
- (e.) The duration of suits;
- (f.) The amounts for which they are brought;
- (g.) A systematic analysis of the different kinds of actions.

In short, we should have a Legal Budget—a clear statement of the legal history of the year, so arranged that judicial statistics would be accurate records of the pulsations of national life, and documents of priceless value as to moral and material changes.⁵²

⁵² Since the paper was read, the Lord Chancellor has appointed a committee, on which the writer has been invited to serve, to consider the revision of the Judicial Statistics.

APPENDIX A.

By the kindness of Mr. Paget, of the Liverpool District Registry, I am enabled to give the following analysis of proceedings in the Liverpool District Registry, Queen's Bench Division:—

Analysis of First and Second Thousand Actions in 1891 from the Cause Book.

	First Thousand.	Second Thousand.
1. Dropped before appearance	350	335
2. „ after „	130	110
3. Final judgment on non-appearance.....	267	301
4. „ Order 14	59	86
5. Order for judgment (O. 14) drawn up, } without judgment	12	20
6. Final judgment on trial	18	9
7. „ reference.....	6	6
8. „ want of pleading	10	5
9. Other final judgments	5	1
10. Actions closed without judgment	29	28
11. Removed to London	101	81
12. „ County Courts	13	18
	1,000	1,000
<i>The above final judgments classified as regards amount (exclusive of costs).</i>		
Not exceeding 50l.	180	241
Exceeding 50l. and not exceeding 100l.	83	79
„ 100l. „ 200l.	44	38
„ 200l. „ 500l.	30	28
„ 500l. „ 1,000l.	13	6
„ 1,000l.	7	7
	357	399
Average amount of final judgment (exclusive } of costs)	121	119

APPENDIX B.

The following is an extract from a memorandum prepared by one who, as a Master of the Supreme Court, has had long and wide experience:—

“Under a rule of 1853, in force until the Judicature Act, there was a ‘Scale of payments to be allowed to witnesses,’ under which a professional man attending as a witness was allowed one guinea *per diem* if the action were tried in the town in which he

“resided, and two to three guineas *per diem* if resident at a distance
“from the place of trial. Shortly after the new Rules came into
“force it was decided on appeal from a Master that the scale was
“no longer in force, and that the Master should allow a reasonable
“amount to witnesses. One guinea or three guineas *per diem* for
“an ‘eminent’ physician, engineer, or surveyor, who may require
“fifty guineas *per diem* for his services, is obviously not a reason-
“able sum. Consequently the cost of a trial, as far as payment
“to witnesses is concerned, is very much greater than it was
“under the old system. But it is not only the allowance to
“witnesses for their attendance at the trial which is increased.
“Under the new Rules the taxing officers are required to allow
“the expense of *procuring* evidence. This is also new; and under
“this Rule the expense of surveys and witnesses ‘qualifying’ to
“give evidence is allowed as between party and party. To enable
“an engineer to give evidence as to an engine having been con-
“structed according to a contract, or a physician to tell the extent
“of injury sustained by a passenger in a railway accident, or a
“surveyor to say how far property has been ‘injuriously affected’
“by a nuisance, these skilled witnesses must see the engine, or
“passenger, or property, and report to the plaintiff’s or defendant’s
“solicitor on the subject. They must be men eminent in their
“profession, as they are expected to be rigorously cross-examined
“at the trial, and opposed to similar witnesses for the adverse
“party who are expected to be called in support of an opposite
“view of the matter. For all such services these eminent gentle-
“men expect to be liberally paid, and as far as such payments
“appear to the taxing officer to be reasonable, he has to allow
“them as between party and party. To some extent this may be
“only transferring the expense to the party who is ultimately
“found to be in the wrong, and who therefore ought to bear it.
“But we imagine that the fact of its being chargeable against the
“opposite party would render the solicitor getting up the case less
“careful in subjecting his client to such expenses. On the same
“principle of allowing a successful litigant a reasonable indemnity
“as to costs in cases where more than one trial is necessary from
“the first having proved abortive, he is now allowed the costs of
“all abortive trials; so that, if a verdict be set aside on account
“of misdirection of the judge, or as being against the weight of
“evidence, or if the jury are unable to agree to a verdict, the
“costs of the first trial as well as of all subsequent trials are
“allowed to the successful party. We are not prepared to say
“this is not right; but it of course greatly increases the costs as
“between party and party. We might state other instances in
“which party and party costs are increased; but the above, we

“ think, the most important, and it is clear from them that the
“ costs an unsuccessful litigant has to pay to his opponent are
“ considerable, and often ruinous. He may well hesitate to take
“ his case into court unless he has a very clear one. It follows
“ that a respectable solicitor will frequently advise his client to
“ compromise or resort to the arbitration of a layman, when the
“ matter may be decided in a rough and ready fashion, and
“ probably as justly, at a comparatively trifling cost. We are
“ inclined to believe that it is the fear of having to pay the
“ adversary’s heavy bill of costs that prevents cases being taken
“ into court for trial. The adversary can have his costs taxed
“ immediately after the verdict, and issue execution unless the
“ amount is paid forthwith. The solicitor’s bill of costs against
“ his client is not so pressing a matter. The solicitor, not wishing
“ to lose his client, may give him time to pay, or reduce his own
“ charges, when the result of the litigation has been adverse to
“ his client. It appears to us that, with the exception of actions
“ which can be disposed of under Order XIV, the effect of the
“ Judicature Acts and Rules is to cause a considerable increase in
“ the costs of litigation.”

DISCUSSION *on* Mr. MACDONELL’S PAPER.

SIR RAWSON W. RAWSON, in opening the discussion, regretted that the chair that evening was not filled by some gentleman with a greater knowledge of legal subjects than he himself possessed. But as a statistician, he could not fail to recognise the great service which Mr. Macdonell had rendered by opening up this new chapter of British history. He was quite sure that the litigation and legislation of a country (even more than the ballads, as was usually said) indicated the character of the people. The author had pointed out how defective our judicial statistics were, in details which would be most instructive in enabling statisticians to judge of the progress of litigation in this country; and he hoped that the authorities would follow the example of other countries in furnishing to the economist, the moralist, and the philanthropist, the means of guidance in their efforts.

Mr. H. CUNYNGHAME thought that anyone who had observed the bar for several years, could not fail to be struck with the greater certainty of litigation at the present time, a phenomenon which would account for some of the statistics in the paper. It was much more possible now to foresee, at the commencement of

a case, what the termination would be, and to advise a client accordingly. This greater certainty was due to several causes, one of which was the greater powers of *amendment* which the judge now possessed. Formerly a mere technical error might invalidate the whole proceedings, but the powers of amendment by judges were now very wide, and it had even been held by the Court of Appeal to be the duty of the judge not to allow an action to be defeated for want of joinder of parties or other technical flaw. These alterations had been introduced in order to secure a fair trial; and as a consequence, there was now much less tendency on the part of a man who knew he was in the wrong to embark in litigation, and trust to some chance to enable him to defeat his opponent, and that this was the case was shown partly by the statistics in the paper. The diminution in trials by jury was an indication of this. In some cases it was of course held to be very desirable to have a jury; for instance, at Manchester the juries were considered very good in trying patent cases, as the members of the jury were a great deal connected with machinery. But patent cases now were generally tried by a judge. There was always an element of uncertainty in going before a jury. The decrease in the number of motions for new trials also pointed to the greater certainty of litigation, at least in its initial stages, at the present time. Every legal adviser now felt better able to advise his client as to the result of a case, because he had more confidence that, on the whole, the real merits of the case would prevail in court; and this feeling was in harmony with the figures placed before them that evening.

Dr. R. GIFFEN said that he should like to bear testimony to the excellent work that Mr. Macdonell had performed, in picking out certain leading facts from the jumble of our judicial statistics. To give a mere record of the business of the courts seemed to be the principle on which the statistics had been framed, but that was not what they wished to know statistically. The conclusions at which the author had arrived, as to the diminution of litigation, and especially as to the diminution of the litigious spirit, in this country, were of very great interest, and he thought that this was an important result of an advancing civilisation. He could have wished to see some statistics as to the cost of litigation, viewed economically. Professor Hector of Glasgow had lately advocated the opinion that it would be extremely desirable for the State to prevent litigation altogether, by informing litigants that, if they wished to bring a case before the courts, they must first satisfy an "agent of the State" that there was a *primâ facie* case for discussion. When this had been done, the defendant on the other side would be required to satisfy another agent; and if those officers declared, not in the interests of the litigants, but in the interest of the State, that there was a *primâ facie* case for discussion, then the whole cost of this permitted litigation would fall on the community at large. In this way the parties would be able to get justice without expense to themselves. It seemed to him that this point of view was worth study, because the duty of the

Government was to provide a certain law for the community, and it was not fair to throw upon a particular individual the whole expense, not of litigating about the facts of a case, but, as often happened, of finding out for the benefit of other people what the actual law was. Another point of very great importance was a reform in the judicial statistics. There was very little comparison in the paper between the statistics of England, Scotland, and Ireland, and anyone who had studied the judicial statistics must be aware that the terminology of the law was so different in the three parts of the United Kingdom, that it was next to impossible to make any comparison. There were other defects; and the best suggestion which he (Dr. Giffen) had to give, was that the sooner Mr. Macdonell was entrusted with the writing of a report annually upon the judicial statistics, and bringing out some results from them, the better it would be for the utility of the volumes themselves.

Mr. JOHN GLOVER was afraid that Professor Hector's scheme, mentioned by the last speaker, would not answer. It might be advantageous for those who sued *in formâ pauperis* (in which suits it was actually in force), but he did not think that the whole litigation of a country could be carried out on that principle. Law without penalty would lack one of its essential features. Mr. Macdonell's figures confirmed the universal impression that commercial cases were not now so common as they were. A statement by an Italian jurist, quoted in the paper, showed "the reason why," which amounted simply to this: that it did not pay to go to law. Englishmen acted on that idea, and he agreed with the author that there was a considerable reduction in litigation. The reason was not because the amount of business was less, nor because there was a greater amount of goodwill among men, nor because there was more honesty. But he was inclined to think that one cause, at all events, was the greater accuracy in conducting business; people were more clever, and made contracts under which it was not so easy to sue them with success if they defrauded those with whom they dealt. But a stronger reason was that litigation did not pay. People saw the waste of time and money involved in going to law, and the utter uncertainty as to how long a case would last, and how much would have to be spent. Our courts were now a luxury in which only the rich could indulge: a sad reflection on our boasted civilisation. Those who were not rich had to put up with the wrongs they suffered; remedy by litigation being so often a greater evil than the original wrong. He (Mr. Glover) hoped to see the day when lawyers would come to the conclusion that it was a mistake to render the courts inaccessible by heavy costs; when they would abolish the ancient terms, and have the courts open like the Bank of England, on every day of the year, Sundays and holidays excepted. He hoped that the present arrangements would give place to cheaper law; not law for nothing, for that he thought would not be an advantage to the community. One result of the present system was that nearly all contracts now contained an "arbitration clause."

Litigants employed in business went to persons engaged in the same trade, because they felt that it was better to put up with the rough justice they could get in this way, than incur the uncertainties and expense of the law courts.

Mr. W. J. R. POCHIN asked whether the explanation of the increase in the number of verdicts, including judgments, for defendants (Table 11) was to be found in the diminution of trials by jury. But whether that were so or not, he could not see how that table justified the statement that it was now possible to give a more decided opinion than formerly as to the result of litigation. It was the plaintiff who launched the action; the defendant had no option as to whether his name should appear on a writ. Considering then that the percentage of decisions, whether by judge or jury, in favour of the defendant, had been constantly increasing, that fact rather seemed to show that the uncertainty of litigation had increased. It seemed to him therefore that there was some further explanation required. The author had stated that at present the successful appellant was often allowed the costs of both courts. He (Mr. Pochin) understood that before the Judicature Act was passed the suitor who obtained a reversal of the first decision was only allowed his costs in the superior court, on the ground that the fault lay with the judge; and thus the man, although perfectly right, had to pay the costs of the first part of the litigation. This had been amended by the Judicature Act, and yet the author deplored the alteration. He could not agree that recent litigation had increased the number of appeals to the High Court to any great extent, as only nine final appeals had been set down for hearing in the Chancery Division at the beginning of the present sittings. He would like to ask also whether the decrease in the number of writs issued in the superior courts of common law since 1863-66 (see Table 1) was due simply to the decrease of litigation *per se*, or to any increase in the jurisdiction of county or inferior courts.

Mr. F. HENDRIKS pointed out that although the barristers and solicitors complained, like other classes, of want of occupation, yet it seemed that they could afford to keep more servants in the form of law clerks, for the number of these latter had increased by 66 per cent. during the thirty years. Although therefore the profits of litigation were not so great as in former times, it seemed that the amount of occupation to be divided amongst the persons engaged in the profession must have been kept up to the level of past years, probably by the satisfactory increase in non-litigious business.

Mr. MACDONELL, in reply, said that he could not, in spite of what Mr. Pochin had subsequently said, but agree with Mr. Cunynghame as to the greater certainty of litigation. In saying that the results were more certain, he meant that it was easier to calculate that a decision would be given in accordance with the real merits of the case, and not upon any adventitious circumstances

connected with it. One of the points he had tried to bring out was that procedure in litigation was, on the whole, simpler and swifter than formerly, in that cases were now conducted with more regard to the substantial justice of the matter than at any other time. It seemed very remarkable and unsatisfactory that the judicial statistics of England, Scotland, and Ireland should be dealt with according to three absolutely different methods; and he endorsed Dr. Giffen's suggestion that an endeavour should be made to reduce them to order and uniformity. Mr. Glover appeared to think that litigation would shortly become an obsolete pastime; but, although the figures showed a diminution of litigation, yet they showed also that a large proportion of the present litigation was concerned with solid disputes, which could not easily be settled in any other way, unless a change for which people were not yet prepared was made. As to the practice which now existed of giving costs upon appeal in the Court of Appeal and in the court below, it seemed to him rather hard that the man who had succeeded in the first court, and failed in the second, should have to pay the costs in both. If the law had been wrongly interpreted or was obscure, why should he suffer? It was not easy to answer Mr. Pochin's question as to whether the decrease in the superior courts was due to an absolute reduction of the cases, or to a transfer of the cases to the county courts. There had been a transfer, but he surmised that, on the whole, the principal cause was an actual reduction in litigation.

*A COMPARISON of the GROWTH of WEALTH in FRANCE and ENGLAND,
also of their ECONOMIC CONDITIONS, specially with reference to
their AGRICULTURAL SYSTEMS, and their POSITION in case of WAR.
By WILLIAM J. HARRIS, ESQ.*

[Read before the Royal Statistical Society, 19th June, 1894.

Sir RAWSON W. RAWSON, K.C.M.G., Hon. Vice-President, in the Chair.]

To compare the results of the economic systems of two nations living side by side, it is necessary in the first place to consider the conditions under which they have existed for a considerable period, and also to take into account any special circumstances which have retarded, or conduced to, the advance of either. If the circumstances were quite parallel and the advantages equally balanced, save and except a difference in the economic systems, the result could be held to prove the soundness of that economic system which that nation with the greatest increase in national wealth had adopted.

Great Britain from 1800 to 1841.

For the first forty-five years of this century Great Britain lived under a protectionist *régime*. In the earlier years the prices of wheat were very high indeed, in fact from 1801 to 1820 the price in currency averaged 85s. 9d. per quarter. Gold was at that time at a premium, but even allowing for this, the average sterling price must have been at least 75s. It is difficult to assert with any certainty what was then the amount of our national wealth; Porter in his "Progress of the Nation," asserts that the personal property in 1841 amounted to 2,000,000,000*l*.¹ Fixed property he estimated for Great Britain alone at a rental value of 95,284,000*l*.² and if one were to compute this at a purchase value of twenty years, the capital would amount to about 1,900,000,000*l*. Mr. Porter takes no notice of property held abroad, nor does he include Ireland. By his system of valuation the national debt would be included as part of the national wealth, but the government property would not be included. He calculates the purchase value of our real estate at twenty-five years, whereas I have only taken it at twenty years. I think there is good reason for making the deduction, seeing that money bore higher interest then than it does now. Taking the population of Great Britain in 1841 at 18,700,000

¹ P. 608. Edit. 1847.

² P. 615. Edit. 1847.

and the national wealth at 3,900,000,000*l.*, it is evident that there was an average wealth for each individual of about 208*l.*

France from 1800 to 1841.

During the first eighteen years of the century France admitted wheat free from all duty. The average specie price was 5*os.* 6*d.* per quarter (22·25 frs. per hectolitre). The value of property passing at death was for 1826, 1,786 millions of francs; for 1835, 2,000 millions; and for 1840, 2,216 millions. Multiplying the latter figure by 36 and converting into £'s sterling, we find a total wealth of 3,150,000,000*l.*, which, like our previous calculation for Great Britain, includes the national debt as private property, but takes no account of government property. The population was 34,000,000 in 1841, and therefore the individual average wealth was only 93*l.*

Both Countries from 1841 to 1865.

From the foregoing it appears that Great Britain was the richer country as regards total wealth, and more than twice as rich in individual wealth. I can bring separate evidence to show the respective well-being or ill-being, whichever you prefer to call it, of the two peoples. Careful calculations have been made in France of the consumption of bread per *capita* at different periods, from which it appears that between 1830 and 1880 the individual consumption of Frenchmen increased by 63 per cent. According to Porter³ the consumption of Englishmen at the earlier period was quite as much as it is now. Agricultural wages have also been carefully recorded in France, and Mr. Porter gives information (p. 111) which coincides very closely with French records. I copy from M. de Foville's excellent book, "*La France Economique*," the records of wages in France as follows:—

	fr.	c.		s.	d.
1813	1	05	per day =	5	1 per week.
'40	1	30	„ =	6	3 „

Between 1835 and 1840 there is ample evidence to show that English agricultural wages in the home counties were about 12*s.*⁴ per week. The superiority of Great Britain to France, and in fact to all other European countries in 1841, can be proved by ample collateral evidence. The "*Edinburgh Review*,"⁵ which was at that time an ardent free trade periodical, in an article against protection, begins with these words: "The history and the prospects of the "manufacturing industry of Great Britain have long excited "mixed feelings of pleasure and pain, of pride and regret, of "satisfaction and of uneasiness, in all thinking minds. We have

³ P. 140. Edit. 1847.
⁴ See debate in the House of Commons, 1840-41. ⁵ 1841, p. 502.

“raised the value of British industry far beyond the value of any other European community. We have accumulated a capital far exceeding, both *positively* and in relation to our population, that of any other existing nation, or, indeed, of any nation whose history is known. Though struggling with a bad climate, and a moderately fertile soil, that industry and that capital have made our land more valuable than any other country of equal extent. In no portion of Europe does the whole amount of wages bear so large a proportion to the whole number of labourers, or the whole amount of profit to the whole number of inhabitants, or the whole amount of rent to the cultivable area. So far as wealth has been our object we have been successful beyond the dreams of avarice;” and again as proving what I have said as to the subsistence of the people, I will quote from a speech made by Mr. Gladstone in the House of Commons in 1843, as follows:—

“A hundred years ago the people of England lived not upon wheat but upon rye. But when we are speaking of the wants of the people as a matter of complaint against the existing state of the law, we must not compare it with an abstract state of perfection, but with what this state has been at former periods; and if you do this, I believe it will be found that the subsistence of the people for the last ten years has been far better than it was two generations ago, and that if you take them as compared with other countries—if you go to the continent of Europe and travel from one country to another—you will scarcely find any one country in which the subsistence of the people is not fixed at a considerably lower standard than the present subsistence of the people of England.”

Starting therefore from 1841—we may assume that Great Britain had a very decided advantage at the start. I have not been able to include Ireland, as the statistics are so meagre—and it is not necessary either, but there is much evidence to show that from 1830 to 1840 Ireland was the largest corn exporting country in the world, and that by far the largest portion of our own supply came from the sister isle.⁶ After 1841 and for the next ten years there seems to have been a moderate growth of wealth in Great Britain, but agricultural wages were undoubtedly lower at the end of the decade than they had been at the beginning. It was in 1841 that Sir Robert Peel first proposed to his cabinet to relax the corn laws. In his private memoranda now published, appears one which was circulated among his colleagues prior to the meeting of

⁶ See Table B in Appendix, showing that our imports from Ireland during the period amounted to 27,663,000 qrs., while the supplies from all the rest of the world only amounted to 15,030,000 qrs.

the cabinet council. In it he argued at considerable length the possible consequences of repeal, and these words occur in it: "The prices of wheat in the United States and the cost of freight would I apprehend preclude the possibility of the delivery of wheat in this country at prices so low as those at which it can be delivered from Dantzic. No quantity of wheat could be delivered here from the United States at less cost than 45s. It appears to me that we cannot calculate that any very considerable quantity of foreign wheat could be delivered in this country, with a profit to the importer, at a lower price (freight commission and allowances for waste, all charges included) than 45s. per quarter." It was with these views that Sir Robert Peel afterwards entered on a complete free trade policy.

From the repeal of the corn laws in England the two countries adopted distinctly different economic policies, Great Britain sacrificed everything to commerce, and France sacrificed a good deal of her commerce to her home trade, and especially to her agriculture. We will now continue the comparison of the results at later dates under these two policies—but first we must consider one circumstance which laid a heavy embargo on the growth of French wealth as compared with English, quite independently of any economic policy. France has always been a military nation, England has not needed to be—England has only needed to keep up a strong navy, but has not wasted the energies of more than one-half the number that the military policy of France has removed from industry. Even in times of peace there must have been more than 200,000 men of the best sinew of the nation removed from industry in France, over and above the number so removed in England. If we take the annual power of production of a strong man at only 40*l.*, this would amount to 8,000,000*l.* per annum loss to France in the handicap, and this amount would be cumulative as against her wealth to-day; but this is not all. Armies not only do not produce, but they require to consume, and the rest of the people are taxed and expend their labour that they may consume. We may fairly conclude, I think, that when we come to our final calculations, France has lost in this way, even without actual war, in the half century which we shall then have reviewed, at least 600,000,000*l.*, with nothing to show on the other side except the acquisition of Savoy and Nice, which may have added 100,000,000*l.* to the national wealth.

The United Kingdom from 1865 to 1875.

The paper which Mr. Giffen read to this Society in 1878, on "Recent Accumulations of Capital in the United Kingdom," treats of the period which we now approach. It was a very remarkable

paper, and showed great research, as all papers by the same author have done. It proposed to calculate national wealth on a principle, previously suggested by Mr. Dudley Baxter, namely, by assuming that income tax returns bore a certain fixed relation to accumulation. As regards fixed property, I agree with Mr. Giffen in thinking that in normal times the principle enunciated would be correct. (I use the word fixed property rather than real property, for it seems to me that no two persons agree as to the property included under the latter designation.) For instance, land, houses, and railways have a certain income which, after making corrections for the mode of assessment, can be capitalised under normal circumstances at a certain number of years' purchase. During the decade 1865-75, land in Great Britain was doubtless worth thirty years' purchase on the rental, and houses fifteen, and railways twenty, as Mr. Giffen valued them. At present I will confine myself to saying that so far as the valuations of the whole of our fixed property were then concerned they were probably not in the least degree exaggerated. With regard to our movable or personal property, the system of valuation may possibly not bear the test of objections which time has brought to light, so well, but I will leave that for the present. The result of the computation was that in the figures chosen for 1865-75 the wealth of the United Kingdom at the latter date was believed by the author to be 8,548,000,000*l.*, whereas at the former date he found it to be only 6,113,000,000*l.* Mr. Giffen thought that the result of these researches justified him in assuming that for the decade the increase in the wealth of Great Britain and Ireland was equal to 240 millions per annum. The talented author of these computations adds: "There is nothing therefore to qualify our sense of "the accumulation of property in recent years."

Commenting on this statement, it seems to me that the great growth of wealth which undoubtedly took place in the period under review was not entirely due to our own exertions or to our own economic system, and that when we are making the comparison between the two countries, it is necessary for us to look into the circumstances rather more closely. We must remember that it was not until the latter half of the decade 1865-75 that our prosperity was so great. I will take income tax returns of all property and profits assessed as reflecting more than any other statistical return any periodical increase of prosperity of a very marked nature. Commencing with 1865, when the profits of the United Kingdom were assessed at 396,000,000*l.*, and taking five-year returns, we find in 1870 an advance to 435,000,000*l.*, or 39,000,000*l.* for the period. Again, taking the second five years in the decade 1870-75 inclusive, we have an advance from 445,000,000*l.* to 571,000,000*l.*, or 126,000,000*l.*

for the period. It is therefore quite evident that we were progressing by leaps and bounds, during the second half of the decade, whereas the progression was comparatively slow during the first half. Why was there this enormous increase of prosperity in 1870-75 as compared with 1865-70?

Simply because our great competitors were at war, and crippled themselves and one another for a considerable period in consequence.

We not only increased our exports enormously at inflated prices, but we also did a great deal of the trade and finance of our competitors France and Germany. I have no doubt that the gain to the United Kingdom through the Franco-German war in acquired wealth was at least 500,000,000*l.* I am aware that the death duties for the special period would not prove such an exceptional extra gain of wealth; but it must be remembered that death duties reflect the antecedent much more than the present gains. It is not the old and decrepid who throw their energy into the acquisition of wealth during periods of great prosperity; it is the young, the strong, and the middle-aged who accumulate, and their fortunes only appear in the death duties many years afterwards.

Those who maintain that low prices of agricultural produce contribute so largely towards national prosperity, will find their views negatived by studying the statistics. The average price of wheat for the decade was 54*s.* 7*d.*, of barley 39*s.* 2*d.*, and of oats 25*s.* 7*d.*; as high in fact, if not higher, than for the ten years preceding the repeal of the corn laws.

France from 1865 to 1875 and onwards.

We have no income tax returns in France to guide us as to any exceptional prosperity for the period under consideration. Perhaps it is fortunate that we have not, as I shall try later on to prove that nothing is more misleading so far as personal property accumulations are concerned.

We have, however, the amount of property passing at death and "donations" to guide us. In France death duties have been used from very early times as a method of taxation. As regards real property they may be accepted as a fairly safe means of calculating the wealth of a community. As regards personalty they are not so dependable, and specially so in a country like France, where families are small, and a partition is so often made before death, in consequence of which an undervaluation may be anticipated when amounts passing at death are taken as the basis. I have argued that the exceptional prosperity of Great Britain during the period 1870-75 would not have necessarily been shown

by the death duties. On the other side, I can with equal assurance argue that a period of great disaster, such as the period was in France, would be reflected in a more decided manner by them. In 1865 the amount of property on which duty was paid in France amounted to 3,880 millions of francs; in 1869 the amount was 4,567 millions of francs.⁷ The French calculate the average period for succession to property at thirty-six years. According to this, the national wealth was 5,580,000,000*l.* in 1865, while in 1869 it had advanced to 6,569,000,000*l.*, or at the rate of nearly 240,000,000*l.* per annum. In short, if death duties can be taken as a close indication, the progress during these years of peace was far greater than in the United Kingdom.

It is evident in fact that taking Mr. Giffen's estimate of 6,113,000,000*l.* as the wealth of the United Kingdom in 1865, and deducting the value of Irish wealth, so as to arrive at the wealth of Great Britain alone, the French had about caught us up in 1865, and were far ahead of us in 1869, the year before their disasters.

In 1870 came the disastrous war with Germany. During the continuance of the war, and even of the communist revolution immediately following, death duties cannot be taken as a guide. For instance, in 1871 the amount passing at death was 5,729 millions of francs, which must have been made up to that figure by the large number of deaths which occurred in the sanguinary battles. In 1873 we find that 4,745 millions of francs passed at death, which, converted into English money with the same multiple, would give national wealth of 6,840,000,000*l.* Thus we see that in four years there had only been an increase of 270,000,000*l.* The loss by the war and communist revolution was in fact far more than the death duties show. It was very carefully estimated by Mr. Giffen in 1872 at 695,000,000*l.* This amount included the 200,000,000*l.* of indemnity, and also 64,000,000*l.* as the estimated value to the nation of Alsace and Lorraine. The loss of Alsace and Lorraine was equivalent to about one-thirtieth part of France, and if the value of the whole nation to-day is 10,000,000,000*l.*, the loss of territory must mean a loss of far more than 64,000,000*l.* In fact if the war had not taken place, and Alsace-Lorraine had remained as part of France, those two provinces would to-day figure for more than 330,000,000*l.* of additional wealth, and it is at that figure that it must be calculated. In round numbers the total loss of wealth by the war was 1,000 millions of £'s.

In 1875 a small change was made in the French mode of valuation of real property for death duties. It did not apply to personalty,

⁷ A table of the amounts subject to duty in France since 1840, will be found in the Appendix, Table D.

but it probably made a difference of 5 per cent. on subsequent assessments. It will not affect our ultimate conclusions so much as the rate of increase at this period, say 1873 to 1885. Computing the wealth in the latter year (1885) in the same way as we have hitherto done, we find that the total amount passing at death was 6,429 millions of francs, giving a total national wealth of 9,200,000,000*l.* Thus, between 1873 and 1885 there had been an apparent increase of 2,500,000,000*l.*, or at the rate of over 200,000,000*l.* per annum. Allowing, however, for the change in the mode of valuation in 1875 already referred to, the increase might only have been 190,000,000*l.* per annum. In the period, however, we have to take account of another great disaster which happened to France, and reduced her wealth. The phylloxera attacked the vines, and the damage done was not only the loss of more than half the crop for many years, but the land, which had previously been more highly valued than any other in France, became almost worthless, and has since had to be replanted at very great cost, and with the loss of the entire produce for many years. In 1887 we find that the "impôt foncier" or land tax was exempted on 3,457,000 acres, on more than half of which the vines were totally destroyed, and on the remainder very seriously injured. Many Frenchmen assert now that the loss by phylloxera was greater than the loss by war; but we need not take such a high estimate as that. The disease has now almost disappeared, and the lands are mostly replanted, and the loss to the nation up to the present time cannot be computed at less than 400,000,000*l.*⁸

The progress of France since 1885 is well maintained. The property passing at death in 1891 amounted to 6,800 millions of francs, giving a capitalised value of 9,800,000,000*l.* In 1892 it jumped up to 7,400 millions of francs, but I decline to found any computation on that year's return, seeing that the mortality was larger in consequence of the epidemic of influenza, which did its work in France as well as in England.

The United Kingdom, from 1875 to the Present Time.

I shall take the liberty of quoting the exact figures which Mr. Giffen calculated for the wealth of the United Kingdom in 1885 with the advance on 1875. (See Appendix, Table A.)

I shall refer to the valuations in that table one by one, and shall state what corrections have appeared to me as being necessary for the present time.

⁸ See article by M. Lalande in the "*Economiste Français*," 4th February, 1888, who makes the loss up to *that time* 10 milliards of francs, equal to 400,000,000*l.*

Lands.

In the first place, we have lands, valued at an income of 65,039,000*l.* as assessed to the income tax in 1885, and valued at twenty-six years' purchase, resulting in an amount of 1,691,313,000*l.* of national wealth. It will be seen by reference to the paper supporting these figures that the number of years' purchase for Great Britain is really calculated at twenty-eight, while for Ireland it is only fifteen. I do not dispute the valuation for Ireland. I expect the agricultural land there is still worth either fifteen years' purchase or nothing. The capitalisation on a rental of 9,983,000*l.* at fifteen years' purchase comes to 149,000,000*l.*, just as Mr. Giffen calculates it. Deducting this, it leaves us with the land in Great Britain valued at an income of about 55,000,000*l.*, and capitalised as national wealth at 1,542,000,000*l.* Since 1885 the income tax assessments from land have declined by nearly 8,000,000*l.* per annum, leaving us with about 47,000,000*l.* gross assessed rental.

Landowners are a much abused class, but from my own knowledge I think I can safely assert that they expend on repairs and improvements for their tenants far more than any other class of the community spends on like purposes. A large deduction should therefore be made from the gross rental. It should have been made in the foregoing paper for the valuation in 1885. The very least that should be allowed is 10 per cent. I have no doubt it is considerably more, but I shall be guided by Sir W. Harcourt's budget estimate. Taking 10 per cent. off 47,000,000*l.*, it leaves us with 42,300,000*l.* When people talk of a landed estate being worth so many years' purchase, it is on the net rental value that this is meant, and not on the gross. We therefore bring down the assessed rental for 1892 to 42,300,000*l.*, but I think everyone will agree with me in thinking that in 1892 rents of agricultural land had not been permanently reduced to meet the times. Landowners have preferred to give temporary abatements, and where temporary abatements have not been given, the tenants have either paid their rents out of capital, or fallen into hopeless arrears. I do not believe that the purely farm land of Great Britain is worth to-day three-fourths of the amount we have just brought it down to, for 1892. Even at this, it would appear very dear by the side of better soil in the United States, the Argentine Republic, and our colonies, which can now deliver their produce in London or Liverpool at as small a cost as many English and Scotch farmers can.

Taking off one-fourth from the foregoing net rental of 1892, we arrive at the sum of 32,000,000*l.* as the net annual value. Let

me be quite fair, and add 2,000,000*l.* as the undiminished value of certain fancy positions which have almost crept into the category of agricultural land by mistake, and also 1,000,000*l.* for the undiminished value of accommodation grass lands near towns, and I think I shall make a liberal concession if I value the land of Great Britain to-day at 35,000,000*l.* per annum. Taking this at twenty-five years' purchase, which is to-day the outside value, we come to the following capitalisation:—

	£
Land in Great Britain	875,000,000
„ Ireland	149,000,000
	<hr/>
	1,024,000,000
	<hr/>

This leaves a deficiency of 670,000,000*l.* on the valuation of 1885.

Houses.

The next valuation is that of houses. In 1885 they were assessed to income tax at 128,459,000*l.* gross value. They are calculated at fifteen years' purchase. In 1892 the assessed value had advanced to 143,000,000*l.* We have nearly 15,000,000*l.* increase, probably all of which applied to new houses, for the old ones were certainly of less value than in 1885. I daresay fifteen years' purchase on the *gross* annual value is rather too high, specially so for Ireland, but I do not wish to be too exacting. I will only deduct from the 1892 assessment 6,000,000*l.* for those houses which were then unoccupied; there is thus an increase of 9,000,000*l.* in the assessed gross value as compared with the 1885 valuation. Capitalising this at fifteen years, it comes to 135,000,000*l.* to be added. It is a question however whether an economic system which forces up the rent of houses in towns ought to be considered an advantage to a country. There can be no doubt that if a larger proportion of our population had remained in the rural districts the rent would have been no higher than it is in France. High rents on houses are a real tax on industry. Houses are not productive property like agricultural land.

Farmers' Profits. Schedule B.

I think Mr. Giffen meant "farmers' capital" rather than "farmers' profits." If he meant "farmers' profits," I fear we should for our present valuation have to debit the whole sum of 521,000,000*l.* What we are trying to ascertain is the wealth of the nation, and the question of profit on the use of certain materials is not so much the point, as the value of those materials.

For instance, wheat, though often produced with considerable loss to the grower, has a value, and can easily be disposed of for that value, however small it may be; also cattle and sheep, although they may be reared without profit, yet they are part of the capital of the country. Farmers' stock is in fact one of those investments of which we have an inventory. It really does not matter very much for our present investigation whether the farmer has borrowed money or not—there are the stock, and the corn, and the implements, which can be valued. In France they enumerate all these things very correctly, even down to the number of ploughs and hoes in the country. I have inserted in the Appendix a valuation of what may be supposed to exist as an average stock at any one time of the year on farms in Great Britain and Ireland. My principle needs explanation. First in Table No. I, I give the value of a year's produce of the land, which I value as nearly as possible at that price at which a farmer could afford to buy it for the keeping and fattening of stock and production of dairy produce to be sold in competition with imports of similar articles. I also value that portion of crops, which the farmer can afford to part with and to sell, at the present market prices. I may however mention that the Gazette prices of wheat, barley, and oats are at present very much higher than those at which foreign produce of good quality can be bought for forward delivery in this country.

From this annual valuation I take only three-fourths as existing at any one time for my capital valuation. The reason for this is that crops are harvested at different periods, and a great part of one crop is often disposed of before another is ready.

My Table No. II is a valuation of the live stock which exists at one time on the farm. Our inventory of live stock is taken on the 4th June, when the number of animals is much greater than in November and December; and in order to get the average stock kept, I have deducted one-tenth from the total valuation. I may mention that in French agricultural returns, the live stock is enumerated in December, when it is least numerous, and therefore in order to make any comparison between the two countries, as well as for our present purpose, it is necessary to make the above deduction. My Table No. III contains the valuation of those things which are necessary to the farmer, and which every farmer must possess, such as carts, implements, seeds, &c.

The French valuations are taken from the Government *enquête* of 1882. This valuation has been the subject of a most exhaustive discussion at the Société Nationale d'Agriculture de France. M. Trésor de la Rocque contended that the Government return was greatly undervalued, while M. Levasseur equally contended that it was quite high enough, and that in fact it might be reduced

by about half a milliard francs. Although the general opinion seems to be that the approaching Government *enquête* will show a considerable advance, yet I feel content to accept the last one, pending its appearance. It amounts to 538,000,000*l.* as the value of the annual produce, and 342,000,000*l.* as the fixed capital. Taking three-quarters only of the annual produce as representing fixed capital, we have the enormous sum of 746,000,000*l.* as the amount of farmers' capital in France, and this, independently of the vines, which most certainly represent fixed capital, but which are not included in the Government return as such.⁹

Thus we have :—

	£
Farmers' capital in the United Kingdom.....	352,000,000
„ France.....	746,000,000

Mines, Ironworks. Schedule D.

Next among the fixed property valuations we come to mines, ironworks, &c., which had advanced in annual value in 1892 by about 3,500,000*l.* Capitalising this at the same rate at which Mr. Giffen did, I must add 14,000,000*l.* to his valuation of national wealth.

Railways in the United Kingdom. Schedule D.

Railways had the important advance of nearly 3,000,000*l.* in 1892, and I do not at all complain of the income being multiplied by 28 instead of 20 as it was in 1875. There was therefore a gain in our national wealth in 1892 due to the extension and increased value of railways amounting to 84,000,000*l.* To show exactly how our fixed property valuation stands as compared with the 1885 valuation, I have prepared the following table, which shows a decrease of 600,000,000*l.* It must be borne in mind that I have taken the number of years' purchase in every instance, except land, from Mr. Giffen's tables for 1885. I am inclined to think that water works and canals are under valued at twenty years' purchase, while gas works are over valued at twenty-five years' purchase.

⁹ The French also possess more than 20,000,000 acres of forest land. They estimate the gross produce of same at 13,000,000*l.* per annum. The net produce would of course be less. In the United Kingdom there are about 2,700,000 acres of plantation and coppice, and in my Table No. I (see Appendix) I have valued the annual produce at 2,000,000*l.*

Valuation of Fixed Property in the United Kingdom for the present Time, and Comparison with the Values of 1885 in Mr. Giffen's Tables.

[000's omitted.]

1892-94.		Years' Purchase.		Mr. Giffen's Valuation, 1885.
SCHEDULE A.	£		£	£
Great Britain—Lands computed } (see paper)	35,000,	25	875,000,	{ —
Ireland (1892 return)	9,943,	15	149,000,	{ 1,691,313,
Houses, 143,047 (1892 return) } Less unoccupied, 6,000.....	137,047,	15	2,056,705,	1,926,885,
Other profits (1892 return)	952,	30	28,564,	26,310,
SCHEDULE B.				
Valuation (see Appendix)	—	—	352,000,	521,864,
SCHEDULE D.				
Quarries (1892 return)	985,	4	3,940,	3,732,
Mines "	10,871,	4	43,484,	30,412,
Ironworks "	2,979,	4	11,916,	9,060,
Gasworks "	4,568,	25	114,200,	125,650,
Waterworks and } salt springs }	4,026,	20	80,520,	65,200,
Canals "	3,406,	20	68,120,	70,920,
Fishings, &c. "	699,	20	13,980,	12,360,
Market tolls..... "	635,	20	12,700,	11,800,
Railways in United } Kingdom }	36,176,	28	1,012,928,	931,560,
	—	—	4,823,057,	5,427,066,

I come now to a much more difficult matter. We leave concrete or real property situated within the country, and come to that about the value of which as national wealth opinions must differ widely. First then we will take property held in other countries, and the indebtedness of other countries to individuals residing amongst us.

Foreign Property owned by Englishmen.

The following would be applicable (see Table A in Appendix):—

	£	Capitalised at	£
Public funds less home funds, Schedule C	21,096,000,	25 years'	527,400,000
Foreign and colonial securities	9,859,000,	20 "	197,180,000
Railways out of the United Kingdom.....	5,041,000,	25 "	126,025,000
Foreign investments not in Schedule C	50,000,000,	10 "	500,000,000

Why the eminent author did not add a proportion of the income from "other public companies" to this list I fail to see, but I think everyone must allow that a considerable number of the limited liability companies administered from London are possessed of property located abroad. These "public companies"

were assessed in 1885 at an income of 34,789,000*l.*, and although it is guess work, yet one might reasonably suppose that one-sixth part of the income was from foreign investments. In 1892 the income had nearly doubled, principally, I imagine, by the formation of new companies. Taking the same proportion now, the amount of foreign investments would be one-sixth part of 68,368,156*l.*, or roughly 11,100,000*l.* of income.

In the valuation for 1885 from which I am quoting, 500,000,000*l.* was taken as the capitalised value of foreign investments on which the chancellor of the exchequer had not then been able to cast his net, for the collection of income tax. It was the capitalisation of 50,000,000*l.* per annum which the talented author considered himself justified in assuming was a real, though undiscovered, income which came from abroad. Our active official servants at Somerset House have with their usual assiduity since succeeded in discovering part of this sum. In the returns for 1892 there are the following advances on the figures of 1885:—

	£
Schedule C. Public funds less home funds	1,637,000
„ D. Foreign and colonial securities	5,813,000
„ D. Railways out of United Kingdom.....	4,205,000
„ D. Coupons returned under Act 49 Viet.	8,229,000

We may therefore presume that Mr. Giffen was right in his assumption that a very large amount of foreign investments escaped assessment. There is not however nearly sufficient as yet to make up the 50,000,000*l.* per annum which he credited, and the opinion at Somerset House seems to be that there is no large amount, still undiscovered.

It must be remembered that the object of this paper is to compare British and French realised wealth, and therefore I ought to add that the French have not the same means of discovering property of this sort that we have, because they have no income tax assessments. There is no doubt that we hold a far larger investment in our colonial securities than France does in hers, also in United States securities, but in foreign bonds to bearer, the same cannot with any certainty be said. I find as the result of inquiries I have made in France that foreign bonds to bearer are largely used there for gifts before death and for family division *inter vivos*. If we are to include all this wealth as English, we must certainly add a corresponding amount to French wealth. It may be true that we hold more Argentine, Uruguayan, and Turkish bonds to bearer, but the French hold a much larger amount in Russians and Italians, while Egyptians are probably about equally divided. It is curious to observe how these investments, which are so easily and cheaply transferred in France, escape death

duties. M. de Foville gives statistics of the amount passing in successions in 1887, and he says the proportion is about the same in other years. In 1887 the amount of government funds (home and foreign) so passing was 423 millions of francs, or 17,000,000*l.*, sterling. If we multiply this by 36 it would only show a total holding of 612,000,000*l.* The French funds alone are about double this amount. It is therefore evident that these investments are undervalued in the national wealth of France, as computed from the “*droits de succession.*” The transfer of such property *inter vivos* does not attract the same attention, and is not attended with the same expense as the transfer of fixed property.

In the Appendix (Table C) will be found a valuation of foreign investments owned by Englishmen, as they appear in the returns for 1892. With the addition which I have indicated of one-sixth part of the income of other public companies, the total amount now annually due to us as interest from foreign investments would amount to 66,000,000*l.* per annum. The question arises how far the foreign investments of private individuals in *real* property abroad are national wealth at all. We have no power to tax the *corpus* of the property during the life of its owner, nor at his death; we can only get at the income for income tax assessment in case the owner chooses to bring it to this country. Foreign nations in making up their valuations of national wealth include all properties such as lands, houses, railways, &c., as theirs—they cannot belong to two countries and be valued twice over in the wealth of the world. A great deal of foreign property does undoubtedly belong to persons who have taken up their residence in England, but that is all. So soon as any calamity overtook us, those individuals among us who had large interests abroad, especially in fixed property, would decamp and make their homes within reach of their properties. Many persons however point to these foreign properties as being the outcome of our economic system, and they would argue that they ought to be put to our credit when we are considering one economic *régime* as opposed to another, whether they contribute government revenue or not. Let us examine a little into the history of these accumulations. From the early part of the eighteenth century England was a great colonising power—and her merchants were investing in all parts of the world. In the year 1798¹⁰ Mr. Pitt calculated that Englishmen had a private revenue of 5,000,000*l.* per annum derived from the colonies alone. It is quite certain that it did not come home. On balance that sum and more must have been reinvested. If we had been receiving remittances from abroad, our imports would have

¹⁰ See Porter's “Progress of the Nation.”

exceeded our exports very considerably. Mr. Stephen Bourne, our eminent member of Council, who has from time to time read before this Society such valuable statistical papers, shows in his published works that for the first forty years of this century our imports and exports were about the same, after all allowances had been made for incorrect valuations. Up to 1829 he considers that the exports exceeded the imports, and even up to 1853 there was no room for remittances to this country, after deducting freight and insurance. It must be quite evident that this was the period when the great foundation of our foreign investments was laid. If the interest and profits had not been, on balance, accumulating abroad, our imports must have exceeded our exports. It is only since 1875 that there has been such a large balance the other way. This is rather a proof that we are using the interest of our foreign investments now, for living expenses in this country, whereas we could previously do without them. It was very largely by accumulation and betterment that our vast investment abroad was built up. I will explain what I mean by "betterment." I will suppose that an Englishman bought in the year 1830 an acre of land on the present site of Melbourne. He might have given 5*l.*, or even 10*l.*, for it. Three years ago it could have been resold for 1,000,000*l.* That increase is in no way the result of any economic system which we have adopted. It is rather coincident with an entirely different system, which holds in the colony of Victoria. "Betterment" has been a very large contributor, and the self-accumulating power of investments has been another. The second of these causes has probably been even more potent in its effects than "betterment." For the sake of demonstration I will suppose that in 1798, when Mr. Pitt calculated 5,000,000*l.* as the revenue from colonial investments alone, there was property to the amount of 100,000,000*l.* held by Englishmen in all parts of the world outside their own country. We know that, on balance, the dividends or profits were not remitted home—and that being so, they must have been reinvested abroad. To prevent all confusion of ideas, let me point out that it would be unnecessary to suppose that none of these investors brought their dividends home, but it is certain that just as many or more prevented the necessity of a remittance or balanced the remittance by adding to their foreign investments. Let us then presume that the 100,000,000*l.* known to be invested in 1798 increased by 5 per cent. compound interest. In 1812 it would amount to 200,000,000*l.*, in 1826 to 400,000,000*l.*, in 1840 to 800,000,000*l.* Then as the value of our imports gradually showed some excess over the value of our exports, the rate of progression was checked and a lower rate of increase was probable, until 1875, since which time the excess of imports over exports

would indicate that the accumulation has been stationary, while at the present time there are strong indications of a decrease having commenced.

Schedule D. Trades and Professions.

While I am on the subject of Schedule D, Trades and Professions, I may mention that the assessments under this division of our revenue receipts have been thoroughly sifted and tabulated, the various interests contributing thereto being carefully enumerated. I know that it cost a good deal of thought, and taxed the ability of some of our best public servants at Somerset House to tabulate these figures. The results have not been given to the public, but I hope that a copy may be supplied to the Library of this Society.

Of one thing I am quite sure, and that is that some not very inconsiderable portion of the balance of what is called income from "Trades and Professions" really consists of salaries paid to managers and others, which might equally well belong to Schedule E. The rule which the eminent author of the 1885 valuation has adopted of capitalising the schedule, is to presume that one-fifth of the total income represents interest of capital, which he capitalises at fifteen years' purchase. I shall give some instances, in order to show how very uncertain all calculations of the sort must be.

We are supposed to be in quest of what is called personal property. Now, what is personal property? and how can we find it? Silver and gold are personal property, furniture and stock-in-trade are personal property, crops are personal property, ships are personal property. What the French call "*capital mobilier*" is what I should call personal property, and what they call "*propriété immobilière*" is what I should call "fixed" or "real property." Let me here give for each country a rough valuation of the above items of personal property, other than stock in trade, of which we have no inventory:—

	France.	United Kingdom.
	£	£
Mercantile marine	12,000,000	100,000,000
Gold coin	178,000,000*	102,500,000†
Silver „	150,000,000*	22,000,000*
Farmers' capital.....	760,000,000	352,000,000
	£1,100,000,000	£576,500,000

* de Foville, "La France Economique."

† Royal Mint.

There is no money in the country beyond the coin, and the notes founded on coin. I will suppose a firm A B, with capital

100,000*l.* It is not necessary that the capital should be in money. Part of it may be in railway shares, or foreign bonds, or mortgages on real property, and part of it may be in cash. I will suppose the cash or money is 10,000*l.*, and that that is used as a balance at the bankers. It does not follow that, even when paid to the credit of A B at their bankers, it is not being used in some other income-tax-paying concern. The banker knows about the average balance, and invests in interest bearing securities either on loan or by purchases. The firm A B may want to buy produce. The banker is glad to give them credit on the security of their property. To do this he uses other funds intrusted to him by other depositors. The firm A B puts, say, 50,000*l.* into produce; the parties from whom they buy may not have immediate employment for the 50,000*l.* They lend it on interest, receiving as security, say, railway shares, or other scheduled property. The employment of this capital seems to be continuous, and constantly overlapping other wealth already valued. In the list of property which I have copied (see Appendix), and on which we are arguing, there is another division in Schedule D called "other public companies," already referred to. I presume this includes all the companies then registered under the Limited Liability Act. The income under this heading is capitalised at twenty years, without deduction. The firm A B, we will suppose, have been assessed at 15,000*l.* a year profit. One-fifth part of this would be 3,000*l.*; multiplied by 15 = 45,000*l.* They are capitalised by our eminent author at that sum (45,000*l.*) as a part of our national wealth while they continue as a private firm. One fine morning they register themselves under the Limited Liability Act. Their capital and profits are not altered in any way, but their value to the national wealth is immediately raised to 300,000*l.*, namely, twenty years' purchase on 15,000*l.* How can it be possible that this simple act on the part of A B has increased the national wealth by 255,000*l.*? I will give another instance: A firm, C D, is in the purely brokerage business, or it may be a professional business, or a land agency business. The partners are wealthy men, but not requiring capital in their business they keep their property invested in mortgages, or houses, or railways. They also return 15,000*l.* per annum to the income tax assessors. By the rule laid down their capital is at once assumed to be 45,000*l.*, and by the system indicated the national wealth is credited with that sum; but they really have no cash capital at all, or only just enough to keep a decent balance at the bankers. The firm C D places itself under the Limited Liability Act for family reasons. They still return 15,000*l.* per annum, and are credited with twenty years' purchase on that, viz., 300,000*l.* as national wealth.

I shall show afterwards how much this limited liability

principle is adding to the amount chargeable on death duties, and I shall endeavour to show by one or two examples what a very incorrect factor the income tax is, for founding upon it any fundamental law for ascertaining capitalised wealth therefrom. I will suppose, for instance, that a public company has paid income tax on 100,000*l.* per annum for ten years, and then fails for 1,000,000*l.* There is no deduction in the amounts appearing as assessed under Schedule D for this loss. Or another case: a person holds investments in shares of companies and in railway shares. He has a good business for some years; but one year misfortune comes upon him, and he loses ten times the annual profit. It does not even appear by the assessments that he has claimed back the income tax on his outside investments. In fact I believe there are doubts if he can do so, besides three years' return on his business income; but even if he claims back this latter, it never appears in the assessments.

We will also take a joint stock bank. Here the profit of 100,000*l.* per annum, which is capitalised by the plan adopted at 2,000,000*l.* of national wealth, does not represent an unemployed capital; the capital overlaps what has already been valued.

Now these examples show how differently many who do not agree with the eminent author may look at such valuations. He was careful to explain that he valued everything in the light of a "going concern," which means future income capitalised as well as present capital; but that is not what we want when we are comparing inventory wealth. The figures have been used by the public as representing the actual wealth of the United Kingdom without the qualification, and they give an exaggerated idea of it, to the ordinary mind.

It is a great mistake to magnify the national wealth. The French found this out when they had to treat with Prince Bismarck for the evacuation of Paris. The prince brought their own valuations of national wealth against them. Several exaggerated totals had been compiled, which M. de Foville characterises as "improvisations malheureuses," and he puts every argument that he can in his charming statistical work, "*La France Economique*," for moderating the calculations of the present wealth of France. I am equally anxious to do my part in moderating the idea which has become current in England, of the immense wealth of the United Kingdom.

Income tax returns may show by their increase in certain branches of trade that these particular branches are either doing well or badly, but a comparison of the amount paid now, with what was paid under Schedule D forty years ago, is most delusive. Those who were actually engaged in business at that time, and can

remember how the returns were made, can have no doubt of the advisability of treating all calculations made thereon, with considerable caution.

There are three other items in the account on which I need only speak very briefly, first, income of non-income-tax-paying classes derived from capital, say 67,000,000*l.* capitalised at 335,000,000*l.* I have no objection to this, I only hope it is more; but it must be borne in mind that fully one-third of this is invested in consols through the savings banks, and the eminent author proposed to exclude consols from his valuation. Secondly, movable property not yielding income, namely, furniture and works of art, 960,000,000*l.* A very large sum, but possibly not beyond the value of household effects in either country. Of the two, France would probably have a greater value than the United Kingdom, because there are not only more dwelling houses, but so many more of her population are the owners of their own houses, and do not live from hand to mouth. Government property in England is valued at 500,000,000*l.*, while consols are not valued as private property. Here is a difference which at first sight appears important. The British valuation of national wealth which has been copied in the Appendix does not include consols, because, although they are owned by own countrymen, the government owes the amount. On the other hand the government property is valued at 500,000,000*l.* The French national debt, or at all events a part of it, is included in the properties passing at death, but their national property is not included, and it is much greater than ours; besides which the French taxpayers own the reversion of all railways, canals, and most public and municipal works, such as water companies, &c., and when these fall in, many believe that their value will be sufficient to pay off the entire debt. The following extract from M. Leroy Beaulieu's "*Repartition des Richesses*," edition 1881, p. 489, bears on this point:—

"Vers le milieu du vingtième siècle c'est à 50 milliards (2,000,000,000*l.*) et peut-être à plus, que s'élèvera, nous ne disons pas la valeur (car ce mot ici n'a plus de sens), mais l'ensemble des capitaux dépensés par l'État, les communes, et les départements de France pour créer toute une richesse collective, dont la plus grande partie sera mise à la disposition gratuite des habitants."

Amounts passing at Death.

Having calculated French national wealth from the amounts passing at death, it is necessary that I should refer to the same statistics in our own country.

The amount on which probate and succession duties are paid

ought to show with some sort of approach to accuracy, the wealth of the United Kingdom; just as the "droits de succession" are used for showing the wealth of France. In England, however, we have certain factors at work which take away from British returns some of their value.

I have already shown how the limited liability system has brought an immense amount, which consists of "prospective" "profits capitalised" rather than of "concrete wealth," into the meshes of the revenue.

Take an instance in the great Dublin brewery: capital to start with was, ordinary shares, 2,500,000*l.*, which, of course, included a very large sum for goodwill, and now the shares are worth more than 8,000,000*l.*, in view of prospective profits. Had this concern remained in the hands of a private firm, the death of any partner would only have added to our probate returns his exact share in the actual cash capital and in the value of the buildings; now the death duties are added to, by the market value of the shares, which must be calculated on a basis of fully five times the amount of concrete wealth. I will give another instance: a large number of these limited liability companies own real property abroad. If that property were in private hands, it would not come into the sphere of our probate duty assessments at all. Our laws admit that it belongs to another nation. In consequence, however, of its being represented by shares in a company the head office of which is in England, it does come into our returns, because all shares and debentures in companies are assessed as personal property.

By these means the British returns assume a shape which does not represent substantial wealth in the same manner as the French returns. In France the system of joint stock enterprise has not made the same progress as it has in England, nor is real property in other countries held to any great extent.

In 1891 the French death duties, including "donations,"¹¹ were paid on property amounting to 272,000,000*l.* For 1892 the amount was much higher, but, as I have already explained, it was a year of great mortality in both countries, and cannot be taken as a test in either. Multiplying 272,000,000 by 36, we get a total national wealth of 9,800,000,000*l.*

The returns for the United Kingdom for 1893 are known. Making an allowance for a double entry of 2,000,000*l.*, they amount to 235,000,000*l.*, including debts and funeral expenses, which are deducted afterwards. I do not deduct them, because it is very doubtful if the French do. This amount of 235,000,000*l.* does not include "donations," as the French returns do. I think I may

¹¹ The donations were about one-seventh of the whole.

quite reasonably consider that the omission is compensated by the various causes I have mentioned, which tend to swell our returns very largely, while the French returns are not materially affected by the same causes.

Computing our national wealth in the same manner as we have computed that of France, we must multiply the above sum by 36.

$$\begin{array}{r} \text{£} \\ 235,000,000 \times 36 = 8,460,000,000 \end{array}$$

From this we must deduct the national wealth of Ireland, since we were unable to include it at the commencement. I think few will be disposed to cavil at my deducting the 460,000,000*l.*, seeing that we have valued her land alone at one-sixth of the whole value of land in the United Kingdom, and thus leaving Great Britain with 8,000,000,000*l.*

What the new estate duty is likely to do I cannot be expected to know; whether it will reduce the capital value of real estate to that extent that there is no increase in the amount passing at death, I cannot say, but I am quite prepared to add one-third to the amount now passing by succession duty returns, in order to compensate for life interests instead of capital value having been calculated in the past.

	£
This would amount to an addition of.....	18,000,000
Less for Ireland, one-eleventh.....	1,700,000
	<hr/>
	16,300,000
	<hr/>

to be added. At the multiple of 36 this may be capitalised at 587,000,000*l.*, bringing the amount to 8,587,000,000*l.* Dividing this amount by the population of Great Britain, 34,500,000 persons, I come to an individual wealth of 248*l.*

The result seems to me to show that in the fifty years under review the French have increased their individual wealth from 93*l.* per head to 254*l.* per head. While we have increased ours from 208*l.* to 248*l.*¹²

Had the French made the most of their position by keeping out of disastrous wars, and only maintaining an army of the same size as ours, their wealth would to-day have been 1,500,000,000*l.* more, while ours would be 500,000,000*l.* less. Had not the phylloxera devastated their vineyards for a period of over fifteen years, they

¹² The value of the earlier figures in both instances is not so great as the later ones. Mons. de Foville admits that at earlier dates some property escaped which is now assessed, and that certain alterations have been made from time to time in the modes of assessment; while Mr. Porter also admits that in 1841 there was a considerable amount of English property which escaped assessment. If we added 10 per cent. to each nation's wealth, at the earlier date, it might perhaps be more correct.

would have gained in addition 400,000,000*l.*; in fact their individual wealth would have been over 300*l.*, while ours would only have been 234*l.*

I have one important recommendation to make, and that is that the very able men who superintend the collaboration of our statistics in the legacy, probate, and other revenue departments at Somerset House may be provided with the means, by the Government of the day, to tabulate them in a form that will convey to us something like a correct idea of the amount that may be set against each different sort of property. I am afraid that this has not been done in the past through a cheeseparing policy. I believe that if 1 per cent. of the amount now spent on Royal Commissions, which are meant to do nothing, was spent on making our Government returns as perfect as those of France, the nation would gain largely by the transfer of the expenditure. We have a splendid and willing staff, but it is worked too hard.

What does a Nation gain by Good Agriculture?

Having now shown, to the best of my ability (but with every wish to be corrected in any error that I may have made), that the economic policy of France has been more favourable to her advance in wealth than our economic policy has been to ours, I propose to endeavour to show that the prices of food are not increased by that sort of protection which is necessary for keeping the land of a country in a proper state of cultivation.

I may mention, with much hesitation, because it is not usual to enter into personal matters before this Society, that my own interest would induce me to prefer the economic system of England to that of France. As an importer of foreign corn I should apparently gain by corn-growing being abandoned in England, and as an owner of grass land, I am undoubtedly interested in obtaining cheap foreign cattle food. If I were to farm on the system which is coming into vogue in most of our grass counties, I should make profitable use of my land during the summer, and employ no labour during the winter. I believe that the prevalence of this system is the commencement of the downfall of England.

I want to show why Frenchmen actually prefer to pay 12*s.* 3*d.* per quarter more for their wheat than we do. This is the process of reasoning which comes to their lips: It is true, say they, that we are paying this extra price, and that we consume individually at least 35 per cent. more than you do,¹³ but it does not follow that we should have been able to buy it that much cheaper, had we followed your example, and opened our ports to the whole world. We grow

¹³ The French consumption is rather more than 8 bushels per head against the British consumption of 6 bushels.

18,000,000 acres of wheat, while you grow less than 2,000,000 acres. Had we adopted the system of free imports, our land would have gone out of corn cultivation as yours has done, and if 77,000,000 bread eaters in Western Europe had been dependent on the world's supply instead of only 39,000,000, prices would be higher. It is the knowledge that we shall always protect our agriculturists, which causes them to maintain their system of farming. By growing 18,000,000 acres of wheat we also produce 18,000,000 acres of straw. The growth of straw governs our style of farming. By the manurial results we are enabled to produce at least three times the amount of vegetables that you do. Your industrial classes eat very few fresh vegetables, while every family in France is amply supplied with them, at a very moderate price. We keep three times the number of cows in France that you do in Great Britain. Why? Because we have sufficient straw to winter our stock in comfort, and thus to save all the manurial product in its most valuable form; and notwithstanding your larger acreage under pasture, we produce at least three times as much milk and butter as you do, and are able to sell it more cheaply. We have a twofold object in keeping so many cows: 1st, we gain in the production of dairy produce; and 2nd, we regard the cow as a machine for turning our straw into the very best manure, and thus multiplying our increase in every other form.

Our people appreciate being able to obtain cheap and ample supplies of these sorts of food at the expense of paying rather more for some other kinds. They certainly save in the cost of fresh milk alone more than the extra cost of their wheat. "Man does not live by bread alone." Our townspeople are not shortsighted as yours are. They say, if the straw was not grown in the country, how dearly we should have to pay to import it. We require it for our horses. All our manufacturers of machinery, earthenware, and many others, require to buy it for packing their goods. All our vintners use it very largely, for every bottle of wine is enveloped in its casing of straw. Again, how immensely it assists our exports. Were it not for this farmyard manure we could not grow the sugar beet, and produce the sugar which we consume and export. You English people alone take from us as much as 3,000,000*l.* worth in a year. We could not produce the alcoholic liquors in the quantities we now do; you alone take 4,300,000*l.* worth from us. We could not produce the early potatoes and the onions of which considerable quantities go to your country. What can we produce better than that which keeps so much labour employed in the pure country air, and which enables us to live far more cheaply than

we could otherwise do, or even than you do? In our towns the rents are not forced up as they are in yours, and the retailer does not look for such exorbitant profits. Our wages in the agricultural districts have increased more than double since 1841. In many parts of England the labourers are earning less than ours.¹⁴ Our expenses are less, and we save more.

We not only protect our farmers, but we also give them direct help. Our budget contains the following contributions in aid of agriculture:—

	frs.
Agricultural teaching	3,283,000
Sheepfolds for breeding.....	77,000
Inspection of agriculture	85,750
Subventions to agricultural associations	850,000
General and district prize shows	790,000
Grand premiums and agricultural prizes for farms } competition	185,000
Drainage and irrigation and "sericiculture" } (expenses of missions abroad)	75,000
Premiums on "sericiculture"	5,000,000
" cultivation of flax and hemp.....	2,500,000
Reconstitution of vineyards	1,000,000
Inspection of the butter and manure trade (expenses } of analysis)	20,000
Premium on destruction of wolves	40,000
Decennial agricultural statistics	60,000
Service of sanitary police for cattle, and indemnities } for slaughtering	550,000
Brood mare shows, premiums on stallions, and } encouragement to racing	1,550,000
Making irrigating canals	821,500
Subventions to companies charged with construction } of irrigating canals.....	1,370,000
Guarantee of interest to concessionary companies of } watering and draining works	1,047,750
Relief for losses from hail, inundations, fire, frost, &c.	2,370,000
Forestry schools	175,000
Restoration and preservation of mountain land } against torrents and avalanches	3,000,000
Making sand dunes firm, and planted	210,000
Construction of forest roads, cross roads, saw mills, &c.	1,080,000
Total	26,190,000

We feel secure in our own position. If we were blockaded by hostile fleets we should have nothing to fear for our food supply.

¹⁴ Extract from letter dated 16th May, 1894, from a landowner in the Gard:—

"Men get here 2½ frs. in winter and 3 frs. in summer for about 7½ hours per day, that is for mere diggers; but anybody who can do such work as ploughing, pruning vines and olive trees, gets more. By working piecework they nearly double their wages."

Contrast our position with yours. What would your position be if next March a combination of maritime nations cut off your food supplies? Before the end of June you would be compelled to capitulate, and pay a ransom which would be based on your own exaggerated calculations of your national wealth. You would then discover that your investments abroad were not really **national wealth in its true sense**. Your enemies would declare all food contraband of war, and would arm every cruiser that they could buy or seize to scour the ocean and bring to their own ports every vessel loaded with food. The contrast between our defensive positions is only too evident. Even if we did not prefer the results of our economic system for other reasons, we should adopt it for such reasons as these.

Gentlemen, my reason for offering this paper to your Society was as follows: In the discussion which took place on the valuable paper read by Lord George Hamilton in February, I ventured to depart (as our President thought) from the subject matter, by suggesting that as a means of national security we should encourage the growth of corn at home as well as strengthening our navy. The few words which I have now read are meant to support my arguments. I insure my house from fire. It is not that I expect it to be burnt to-morrow, but I know what a serious matter it would be to my family if it was. I pay the premium gladly, and it is a very small premium which Great Britain would need to pay to feel that we had a food supply which could at all events be eked out, though perhaps on short commons, in case of war.

APPENDIX.

TABLE A.—Amount of Income in Income Tax Returns, derived from Capital, Number of Years' Purchase at which the same may be Capitalised, and Approximate Amount of Capital; together with Estimate of remaining Income and Capital of the Country.

[000's omitted in amount columns.]

	Income.	Years' Purchase.	Capital.	Years' Purchase and Capital at Years' Purchase Employed for 1875, where Change has now been made.
<i>Under Schedule A—</i>	£		£	£
Lands	65,039,	26	1,691,313,*	30 1,951,170,
Houses	128,459,	15	1,926,885,	— —
Other profits	877,	30	26,310,	— —
<i>Schedule B—</i>				
(Farmers' profits)	65,233,	8	521,864,	10 652,330,
<i>Schedule C—</i>				
(Public funds less home funds)	21,096,	25	527,400,	— —
<i>Under Schedule D—</i>				
Quarries	933,	4	3,732,	— —
Mines	7,603,	4	30,412,	— —
Ironworks	2,265,	4	9,060,	— —
Gasworks	5,026,	25	125,650,	20 100,520,
Waterworks	3,260,	20	65,200,	— —
Canals, &c.	3,546,	20	70,920,	— —
Fishings	618,	20	12,360,	— —
Market tolls, &c.	590,	20	11,800,	— —
Other public companies	34,789,	20	695,780,	15 521,835,
Foreign and colonial securities, } &c.	9,859,	20	197,180,	15 147,885,
Railways in United Kingdom	33,270,	28	931,560,	25 831,750,
„ out of „	3,808,	20	76,160,	— —
Interest paid out of rates, &c.	5,041,	25	126,025,	— —
Other profits	1,435,	20	28,700,	— —
Trades and professions—one-fifth of total income of 180 millions	36,096,	15	541,440,	— —
Total under income tax	428,843,	—	7,619,751,	— 7,661,894,
Trades and professions omitted, 20 per cent. of amount assessed, or 36 millions, of which one-fifth is	7,219, 960,†	15 15	108,285, 14,400,	— —
Income of non-income tax paying classes derived from capital	67,000,	5	335,000,	— —
Foreign investments, not in Schedules C and D	50,000,	10	500,000,	— —
Movable property not yielding income, e.g., furniture of houses, &c., works of art, &c.	—	—	960,000,	— —
Government and local property, say	—	—	500,000,	— —
	554,022,	—	10,037,436,	— 10,079,579,

* This is the result of capitalising lands in Ireland at fifteen years' purchase, and in England and Scotland at twenty-eight years' purchase. The average for the United Kingdom is an infinitesimal fraction over twenty-six years' purchase.

† Estimate of income escaping assessment by raising limit of exemption in 1876.

TABLE B.

Grain, Meal, and Flour Imported into Great Britain from Ireland between the Years 1831 to 1840 inclusive.

[See Return presented to the House of Commons, 11th February, 1842.]

	Qrs.
1831	2,429,182
'32	2,990,767
'33	2,737,441
'34	2,792,658
'35	2,679,438
'36	2,958,272
'37	3,030,293
'38	3,474,302
'39	2,243,151
'40	2,327,782

27,663,286

Imports, Grain, Meal, and Flour, from all Foreign Countries and Colonies into Great Britain between the years 1831-40 inclusive.

[See Return presented to the House of Commons, 11th February, 1842.]

	Qrs.
1831	3,476,076
'32	656,317
'33	448,239
'34	455,555
'35	306,484
'36	634,673
'37	1,314,197
'38	1,525,690
'39	4,529,020
'40	3,895,701

17,241,952

Less re-exports..... 2,211,071

15,030,881

TABLE C.

Foreign Investments actually Paying Income Tax, 1892.

	Income.
Sch. C. India Government stock and loans	3,203,573
" Indian guaranteed railways, canals, and irrigation works.....	4,580,797
" Foreign and colonial funds, &c.....	14,949,017
Sch. D. Foreign and colonial securities and possessions and other profits	15,671,446
" Railways out of the United Kingdom.....	8,005,161
" (Act 48 and 49 Vict., cap. 51, sec. 26) coupon	8,229,648
	<hr/> 54,439,642

The amount of income from similar investments calculated in 1885, was as follows—

	Income.
Sch. C. Public funds less home funds	21,096,000
Sch. D. Foreign and colonial securities	9,859,000
" Railways out of the United Kingdom ...	3,808,000
*Foreign investments not in Schedules C and D	50,000,000
	<hr/> 84,763,000

* Although only about 20,000,000*l.* income from foreign investments has been brought into the account since this estimate was made by Mr. Giffen in 1885, yet it is quite possible that some portion of the income of "other public companies," which amounted in 1892 to 65,953,842*l.* net, may be derived from foreign undertakings. Taking one-sixth part as likely, the income from foreign investments would now reach the sum of 65,439,642*l.*

The Act 48 and 49 Vict. was passed with a view to the discovery of all coupon bonds held in the United Kingdom.

TABLE D.—*Amounts of Inheritances and Donations subject to Duty in France.*

[Millions of francs.]

	Inheritances.	Donations.	Total.
1840.....	1,609	607	2,216
'50.....	2,025	659	2,684
'60.....	2,724	802	3,526
'65.....	3,029	851	3,880
'69.....	3,837	930	4,567
1870.....	3,372	682	4,054
'71.....	5,011	718	5,729
'72.....	3,951	1,128	5,079
'73.....	3,712	1,033	4,745
'74.....	3,931	996	4,927
'75.....	4,254	1,067	5,321
'76.....	4,702	1,068	5,770
'77.....	4,438	1,028	5,466
'78.....	4,748	1,054	5,802
'79.....	5,004	1,103	6,107
1880.....	5,266	1,117	6,383
'81.....	4,914	1,089	6,003
'82.....	5,027	1,046	6,073
'83.....	5,244	1,062	6,306
'84.....	5,078	1,023	6,101
'85.....	5,407	1,021	6,428
'86.....	5,369	1,019	6,388
'87.....	5,409	998	6,407
'88.....	5,372	959	6,331
'89.....	5,059	942	6,001
1890.....	5,811	937	6,748
'91.....	5,792	1,008	6,800
'92.....	6,405	1,012	7,417

TABLE I.—*Value of a Year's Produce from Agricultural Land in the United Kingdom based on the Value as Food for Stock for what is used on the Farm or in competition with Foreign Imports for what is Sold.*

	Acreage in 1893.	Average Yield per Acre.	Quantity.	Price.	Total Value.
CEREALS.	Acres	Bshls.	Qrs.		£
Wheat : Grain.....	1,955,213	29	7,087,647	24s. per qr.	8,505,176
Straw	—	—	—	30s. per acre	2,932,819
Total Wheat	1,955,213	29	7,087,647	—	11,437,995
Barley : Grain—Two-thirds fine quality...	—	—	6,284,860	25s. per qr.	8,856,075
One-third feeding quality	—	—	3,142,430	15s. „	2,331,825
Straw	—	—	—	20s. per acre	2,251,293
Total Barley	2,251,293	33½	9,427,290	—	13,439,193
Oats : Grain—One-sixth sold to persons not farmers	—	—	3,511,789	18s. per qr.	3,160,610
„ Five-sixths used by farmers (at consuming value)...	—	—	17,558,945	14s. „	12,291,271
„ Straw	—	—	—	25s. per acre	5,544,920
Extra Price on 1,000,000 qrs. sold for oatmeal and special purposes	—	—	—	7s. per qr.	350,000
Total Oats	4,435,941	38	21,070,734	—	21,346,811
Peas, Beans, and Rye : including Straw	528,730	—	—	5l. per acre	2,643,650
Extra Price on 1,500,000 tons straw sold to persons who are not farmers	—	—	—	1l. per ton	1,500,000
ROOTS.					
Potatoes : Scotland.....	137,244	—	—	15l. per acre	2,058,660
England	390,577	—	—	10l. „	3,905,770
Ireland	734,853	—	—	7l. „	5,143,971
Extra Price on 1,000,000 tons sold direct to consumers ... }	—	—	—	30s. per ton	1,500,000
Total Potatoes	1,262,674	—	—	—	12,608,401
Turnips	2,245,050*	—	—	5l. per acre	11,205,250
Extra price on 1,000,000 tons sold direct for human consumption ... }	—	—	—	10s. „	500,000
Total Turnips.....	2,245,050*	—	—	—	11,705,250
Mangolds	413,334*	—	—	8l. per acre	3,306,672
OTHER CROPS.					
Cabbages, Vetches, &c., &c.	513,000	—	—	7l. per acre	3,591,000
Extra Price for 150,000 acres near towns.....	—	—	—	5l. „	750,000
Total Cabbages, Vetches, &c., &c.	513,000	—	—	—	4,341,000
Hops	56,000	—	—	45l. per acre	2,520,000
Flax.....	72,000	—	—	10l. „	720,000
Market Gardens, Orchards, &c., produce	308,000	—	—	25l. „	7,600,000
Woods, Coppices, Nursery Grounds, &c.	—	—	—	—	2,000,000

* These figures were in 1893 2,286,473 and 394,543 respectively. These corrections will very slightly alter the totals.

TABLE I.—Value of a Year's Produce from Agricultural Land in United Kingdom—Contd.

	Acreage in 1893.	Price.	Total Value.
GRASS CROPS AT CONSUMING VALUE.	Acres		£
Hay cut from Clover, Sainfoin, and Rotation } Grasses	2,701,846	80s. per acre	10,807,384
„ Meadows (Permanent Pasture)...	5,803,011	70s. „	20,310,571
Extra Price on 3,200,000 tons sold to } Persons who are not farmers	—	15s. „	2,400,000
Total Hay	8,504,857	—	33,517,955
	Number of Animals Grazed.*	Value Con-tributed by Grass per Head.	
*Grazing: Steers and Heifers; summer fat- } tening (corn and cake extra)...	1,200,000	2 <i>l</i> .	2,400,000
Cows and Heifers in milk and in } calf	4,000,000	5 <i>l</i> .	20,000,000
Horses and Colts; summer keep ...	700,000	30s.	1,050,000
Mares and Unbroken Horses; } winter keep	500,000	2 <i>l</i> .	1,000,000
Sheep; summer fattening (corn, } roots, and cake extra)	7,000,000	6s.	2,100,000
Sheep, store; keep, wool, and } increase	20,000,000	10s.	10,000,000
Young Store Cattle; keep	About 5,000,000	20s.	5,000,000
Asses, goats, &c.	—	—	200,000
Total Grazing, at consuming } value	—	—	41,750,000
Pigs and Poultry: Profit on Pigs and } Poultry fed on home grown produce only } beyond the value of that produce	—	—	1,500,000

* The acreage of the Grazing is as follows:—

	Acres.
Aftermath of Clover, Sainfoin, and Rotation Grasses	2,701,846
„ Permanent Pasture	5,803,011
Clover, Sainfoin, and Rotation Grasses, not for Hay	3,214,503
Permanent Pasture, not for Hay	21,897,370
Total	33,616,730

To which must be added about 29,000,000 acres of unenclosed Mountain and Heath Land.

SUMMARY.

	Value. £
Total Cereals	50,367,649
„ Roots	27,620,323
„ other Crops	17,181,000
„ Grass Crops at consuming Value	75,267,955
„ Pigs and Poultry	1,500,000
Grand Total.....	171,936,927

TABLE II.—*Valuation of Live Stock in the United Kingdom, Valued at Store Prices, seeing that their Food has been Valued in Table I; if not Valued as Stores, the Food would be Valued twice over.*

	£
Horses and colts, 2,063,000 (18 <i>l.</i>)	37,134,000
Extra for pedigree stock	2,000,000
Cows and heifers in milk or in calf, 4,014,055 (12 <i>l.</i>)	48,168,660
(This includes old cows, almost unsaleable, and heifers that will not calve for eight months)	
Cattle 2 years old and above, 2,683,415 (12 <i>l.</i>)	32,200,980
„ over 1 year and under 2 years, 2,334,049 (7 <i>l.</i> 10 <i>s.</i>)....	17,505,367
Calves and cattle under 1 year, 2,176,035 (3 <i>l.</i> 10 <i>s.</i>)	8,616,122
Extra for pedigree stock	2,000,000
Store sheep, 19,760,056 (32 <i>s.</i>)	31,616,089
Lambs, 12,014,768 (15 <i>s.</i>)	9,011,076
Pigs, 3,278,030 (30 <i>s.</i>).....	4,917,045
Asses and goats	1,000,000
Poultry	3,000,000
	<hr/>
	197,169,339
	<hr/>

TABLE III.—*Permanent Capital Invested in the Business.*

	£
Harness for 1,012,867 working horses in Great Britain, } cost when new 3,038,601 <i>l.</i>	value } 2,000,000
Harness for about 350,000 working horses, Ireland	525,000
Carts, implements, tools calculated at 15 <i>s.</i> per acre on } the arable land, 20,280,000 acres	} 15,200,000
Carts, implements, tools for grass land, at 6 <i>s.</i> per acre, } on 27,500,000 acres	} 8,500,000
Seeds, clover, grass seed, mangold, and turnip seed, bought (Seed, wheat, barley, and oats not being deducted from the crops, are valued therein)	2,000,000
Unspent manure after wheat and roots, say 6,000,000 } acres (20 <i>s.</i>)	} 6,000,000
Unspent manure on grass land where cattle have been } grazed with cake or corn, 1,200,000 head (30 <i>s.</i>)	} 1,800,000
On grass land where sheep have been fattened with cake } or corn, say 7,000,000 head (5 <i>s.</i>)	} 1,750,000
Dung heaps, less value of straw, already credited to crops	5,000,000
Artificial manure and corn and cake in stock at one time....	3,000,000
The valuation of crops includes fresh manure applied, rent, labour, and taxes paid.	
	<hr/>
	45,775,000
	<hr/>

TABLE IV.—*Summary. Total Valuation of Tenants' Capital.*

	£
One year's crops, Table I—171,936,927 <i>l.</i> ; three-fourths } on hand at one time.....	} 128,952,695
Live stock, Table II—197,169,339 <i>l.</i> ; deduct one-tenth } for the enumeration being made on 4th June instead } at end of year, and for casualties	} 177,452,406
Permanent capital invested in business other than in } live stock	} 45,775,000
	<hr/>
	352,180,101
	<hr/>

DISCUSSION *on* MR. HARRIS'S PAPER.

THE CHAIRMAN (SIR RAWSON W. RAWSON) in opening the discussion, said that, even admitting that the growth of wealth in France had been greater than in Great Britain, he could not see that it was in any way proved to be the result of the different commercial policy of the two countries. But the methods of using the data for such a comparison required very close investigation, and he himself doubted them, for the reason that Mr. Harris at the outset had compared Mr. Porter's estimate, based on the value of personal property and of rental of lands, with an estimate of French property derived from death-duties. The two methods did not seem to him to be comparable. He did not believe it possible to compare the wealth of two countries upon either base without knowing clearly the data on which the calculations of both countries were framed, and he could not even feel sure how far the assessment and collection of death-duties in France afforded the means of judging of the growth of national wealth in that country at different periods.

Mr. STEPHEN BOURNE said that the paper must be taken as an instalment only of an inquiry into a question of very great importance. It was so intricate a subject, and required so much knowledge of the circumstances under which the statistics were compiled, of the systems adopted in the different countries, and of the fluctuations in the modes of valuation, that it would require much time and thought before it could be thoroughly elucidated. There were several points to be borne in mind. He was decidedly of opinion that the national debt must be excluded from any calculation of the national property, and, on the other hand, that the value of Government property must be included. Property existing in the country did not cease to be wealth because it belonged to the Government and produced no interest, but the debt exhausted the resources of the country, and, although a source of wealth to individuals, was such at the expense of other individuals. The circumstances of France and England were so different that an estimate of the amount of wealth within the boundaries of either country was not a fair criterion. There was comparatively very little colonial enterprise in France, and very little money was invested in foreign countries. Any proper estimate of the growth of wealth must refer to the two empires, rather than the two kingdoms. Mr. Harris took no account of this when dealing with the death-duties. The author spoke of the fact that foreign property held by commercial bodies at home becoming an estimated source of wealth by being subjected to death-duties, whereas if property were not held by a company it would not appear in the estimate. It could make no difference to the real wealth of a country in either case. When a man started his son in business in America, as a result of his own savings, that was just as much a proof of prosperity at home as if the money had been held by a public company in England. The habits of

the people, again, were completely different in France and England, the tendency to save being much stronger in the former country than in the latter; and it did not follow at all that the accumulation was a result of a difference in the economic policy of the two countries. It must be borne in mind that the money which went to the colonies really belonged to the empire as much as that which remained at home. Much wealth also which had been accumulated at home had been invested abroad, sometimes in countries whose protective policy gave firms the means of employing their capital. There were an immense number of causes to be investigated, and their origin to be discovered, before any accurate conclusion could be arrived at. He thought that Mr. Harris had done good service in commencing an inquiry which he hoped younger Fellows of the Society would pursue.

Mr. ROWLAND HAMILTON said that in the event of a war cutting off our food supplies, our position would be much the same as that of a continental nation growing its own food, if a hostile force crossed its frontier and could ravage the country. No doubt England would suffer in case of a long and disastrous war, but not more so than any other foreign country. We were bound to accept our position as a maritime and mercantile power. We could not raise food enough to keep pace with the increase of population, which was one important element in national strength. He thought that we had no reason to be dissatisfied with our position, or that we were in any way insecure because we depended on the manifold resources of our trade even for our food supply.

History confirmed this view, for if there were one city more than another which had remained stable in the face of the greatest possible difficulties, it was Constantinople. It could not draw its supplies from its own territory. It fell at last not from any inherent defect, but only because those nations towards which its trade was mainly directed fell into utter ruin when the Turk overran Western Asia. Very much the same could be said of the commercial cities of Italy. There was no reason to suppose that, so long as we took care of our defences, we were in a less favourable position than any continental power.

Mr. F. HENDRIKS called attention to the enormous divergence in the valuations of land as made by Dr. Giffen and Mr. Harris, the latter being 44t millions below the former. Land had always been, in a general way, and as an element of national wealth, considered to be as valuable a security, and in some respects more stable, than consols, and ought also to be valued at a somewhat lower rate of interest, and therefore at a higher number of years' purchase. Consideration should be given to the fact that so long as reasonable order is preserved in a State, the capital value of the land must endure to some one or other, but that interest on public debts was liable to be suspended or reduced to little or even to nothing, its capital value being thus diminished or effaced as by a sponge. At the present time consols bearing $2\frac{1}{2}$ per cent. interest were valued at forty years' purchase; and, in an estimate like the

one before the meeting, of the value of the land as national wealth, we might not be greatly erring if we multiplied the gross rental of Great Britain by thirty-six years' purchase in an estimation of its capitalised value. In doing so we should be allowing a deduction of 10 per cent. (as compared with the capitalised comparative value of forty years' purchase for consols) to provide against some at least of the special burdens upon land other than income tax, which fell upon consols' interest as hardly as upon interest from land. So that Dr. Giffen in valuing land rental (gross) of Great Britain had, comparatively with the present undoubted forty years' purchase as the capitalised value of $2\frac{1}{2}$ per cent., allowed a margin of twelve years' purchase off the gross value, and was not exaggerating when he took only twenty-eight years as the capitalised value.

He therefore held that Dr. Giffen's estimate was the more reasonable of the two before this meeting, and he could not conceive that Mr. Harris could be right in considering land, taking it all round in the United Kingdom, as worth only eighteen and a-half years' purchase. It would result if this were really so, that the whole was calculated upon the basis of interest being 5.405 per cent., say 5*l.* 8*s.* 1*d.* In point of fact Mr. Harris seemed to be making a deduction of 54 per cent. from gross value, if we take forty years' purchase of consols' interest as determining the standard from which the value of other descriptions of British national wealth can be, with more or less accuracy, determined or compared as at the present date. Mr. Harris, as well as Dr. Giffen, had valued Irish land at fifteen years' purchase; but the amount was so small in comparison with that of English and Scottish land, that it did not form an important item in the total. He would also ask Mr. Harris at what number of years' purchase the French lands had been calculated? It was tolerably notorious that in some parts of France land did not pay more than $2\frac{1}{2}$ per cent., which was forty years' purchase. In taking twenty-eight years' purchase for land in the whole of Great Britain, Dr. Giffen had been guided also by the fact that much land was being built upon, and in view of our, comparatively with France, fast increasing population, contained all the potentiality of future increase in value. Nor could he (Mr. Hendriks) agree with Mr. Harris that repairs and improvements should be deducted; for the greater part of these, whether necessary or not, or voluntary, or the contrary, would certainly be defrayed either by the landlord or the tenant, or by both. But whoever paid for this, the value of the improved land remained as national wealth. The method of calculating from the death-duties seemed to him most fallacious. Two countries might have property of precisely similar value, but the rate of mortality in the one might differ by 10 per cent. from that in the other. The rate of mortality in France amongst the class of landed proprietors he believed to be greater than in England, partly because the population represented by this class was an older one, there being a smaller element of young life. Consequently, if when in England a multiplier of 36 was taken, in roughly, but he submitted, very inaccurately, deducing

the capital value of the whole land of the country from the one year's falling in from deaths, as would be indicated by the amount to be assessed to the death-duties of the future, it might be necessary in such a comparison as Mr. Harris had brought to notice, to take a corresponding multiplier of 40 in France. That was an actuarial question depending on the exact distribution of the population at each age amongst the landed proprietors of the two countries, and its accurate solution was one certainly of exceeding delicacy, and open to many errors and doubts.

Major P. G. CRAIGIE said that the author had put two, if not three, papers into one, and raised various questions of method which could be best discussed apart from the comparative figures adduced. Thus the valuation of land just mentioned by Mr. Hendriks was a specific question which might be fitly debated by itself. He thought it would be fairer to take the smaller number of years' purchase at the present time in capitalising the land rentals shown in the income tax returns. Mr. Harris had doubted the wisdom of taking the income tax returns as a basis for the Schedule D capitalisations in this inquiry. With regard to land even, however, there did seem to be great difficulty in employing these figures. The difference between the figures used by Dr. Giffen and those of Mr. Harris was so great that it was clear it represented not wholly a reduction of value, but the result of employing different methods of calculation. Mr. Harris held that the income tax returns had not been lowered sufficiently to suit the alteration which had occurred in the rents. That was possible, but any reduction of estimated national wealth due to capitalisation on a lower figure, if merely arrived at by the rectification of the method on which the calculation was made, could not be held to affect the total growth or diminution of wealth during the time, unless the earlier figures were also corrected to the scale proposed. With regard to Mr. Hendriks' remarks that twenty-eight years' purchase of land rental was the better estimate, he would refer to the Treasury valuation of 1885, appearing in the elaborate calculations made in Sir R. Paget's *Return of Real and Personal Property* in 1886. At that time the figure taken was twenty-five years' purchase on the gross value; and this was the result of deductions from sales which had actually taken place, and based on information collected through the Local Government Board. Speaking generally on the wealth comparisons in the paper, he thought that they had not sufficient data for very reliable conclusions, and that those which they had at different dates and in the two separate countries were not comparable in every instance. But the most interesting point to himself was the method—novel as compared with those usually quoted in recent years—which the author had proposed for the valuation of the agricultural production and agricultural capital of this country. Mr. Harris wished them to consider as produce to be valued only primary produce, grain, grass, or green crops, and not to reckon at all the secondary produce from the sale of live stock. Now the animal production formed by far the largest portion of ultimate

agricultural produce—the one to which a money value could be attached when sold, and it would cause a very great change if we were to take now only the primary production, and value the grass of the country at its consuming value before it went into the animal. He had understood Mr. Harris to contend that there was no profit in fattening stock (except pigs and poultry), that the sole profit accrued from growing grain, grass, or roots, and that these alone ought to be valued. That was not the French method, in which no doubt there were more double entries than in the old fashioned English valuation. But the difference of method would prevent the totals being accurately contrasted. He should imagine that there was some very considerable deduction to be made from the estimate of agricultural production attributed to France. Before any such comparison of produce was accepted, they required to know which of the two methods—the valuation of the crops saleable or consumed, or of the sales of vegetable produce and of that yielded by the manufactured commodity, or live stock—was the correct basis of an estimate of the agricultural wealth of the country. Discussion on a definite point like this might be more useful than on the less tangible but wider issues to which the author had devoted so much labour.

Mr. CLARE SEWELL READ agreed with the author that it was quite sufficient to value the land at twenty-five years' purchase; in fact, in the eastern counties he thought twenty years was nearer the truth. At least 25 per cent. should be deducted from the property tax returns to arrive at the net value, and he was sure that the owners of real estate did not net in these days of agricultural depression more than 50 per cent. of the gross value. The more rapid increase in English, as compared with the French, populations might make some difference as to the relative value and the average wealth of individuals in the two nations; the English population having nearly doubled, while the French remained almost stationary. The agriculture of the two countries was also very different, England being chiefly a meat producing nation, while France produced more milk. He agreed with Mr. Harris's novel valuation of crops, and thought that he was right in not valuing the fodder and roots produced twice over: once before they were consumed by the animals, and then again by valuing the animals after they had eaten them. He was quite right in not enumerating the animals and adding them to the acreage value of the produce of the country, although they did add to its agricultural wealth. There was, however, still the value of the large quantity of artificial food produced outside the country, which augmented the value of the manure, and much increased the animal food of the country as well as added to its cereal produce.

Mr. HARRIS, replying to the chairman's objection that a valuation from death-duties for France could not be compared with Mr. Porter's computation for 1841, would point out that Mr. Porter had himself used the death-duties, and quoted them specially as proving that the nation then possessed at least the

2,000 millions which he had given as the value of personal property in Great Britain at that time. Mr. Porter also distinctly stated that certain important classes of property then escaped death-duties, so that he (Mr. Harris) could see no reason for making any reduction in his valuation of British as compared with French wealth at that time. Referring to Mr. Bourne's statement that the wealth of the whole empire ought to be calculated and not that of Great Britain alone, Mr. Harris pointed out that even if it were, the individual wealth would be no greater at the present time. Mr. Bourne had asserted that whether foreign property belonged to an individual or a company it made no difference, but it did make this important difference in any calculation of national wealth made on amounts passing at death, that in the latter case the value of the property came into the death-duties, but not in the former. As regarded the greater tendency to thriftiness in France, he quite admitted it, but he attributed it to the different economic policy of the two countries: our policy driving the people into the towns, where they met with gin palaces at every corner. He (Mr. Harris) believed that a Frenchman in Paris squandered quite as much as an Englishman in London. Mr. Bourne seemed to think it was as much to our interest to compete with foreigners in their countries as to do our productive work at home. He (Mr. Harris) considered it a great loss to England that an Englishman should use his capital for establishing a cotton factory in the United States instead of at home. Mr. Rowland Hamilton had said that every country was liable to be attacked, and that therefore England stood in no exceptional position in this respect; but England was liable to be attacked in two ways: we offered the greatest temptation to an enemy, who knew that we could be starved by cutting off our food, and by this means we might be subdued without a single soldier landing on our shores. This was not the case with any other important country. He (Mr. Harris) had studied the matter of food supply perhaps more than any other, and he was sure that with an altered system of agriculture England could raise food enough: not sufficient perhaps to live as we do now, but enough to withstand a siege. We had at least 12 million acres in the poorest grass, which could with the greatest advantage to the wage-earning classes be turned into arable land. In reply to Mr. Hendriks, land was valued in France for computing the amounts passing at death at twenty-five years' purchase of its presumed annual value, the only difference from his (Mr. Harris's) estimate for England being that it was estimated in France on the gross value. But as land was very seldom rented there, belonging mostly to those who cultivated it, the valuation was taken at a lower sum than in England, where actual rentals fixed the value for death-duties. Mr. Hendriks had also said that some of the land was building land; but, as a rule, so soon as houses were built the land and the houses were assessed together in the rent of the houses. It was not until the division came for death-duties that the two properties were sometimes divided into ground rents and leaseholds. In all cases where the ground belonged to the owner of the house the

two were valued together as a house under Schedule A. The difference in the rate of mortality in France to that in Great Britain was a question which he would investigate, as it might alter in some slight degree the number of years' purchase applicable to each country.¹ With reference to Mr. Hendriks' remarks as to the rental of agricultural land, he was perfectly certain that land was worth now nothing like what it was in 1885; and in regard to Major Craigie's question as to the number of years' purchase which should now be used as a fair multiple, he would remark that it was almost impossible to sell land now, while there had been plenty of buyers in 1885. If it had been valued at twenty-six years' purchase then, it ought not to be worth more than eighteen or twenty years now. In the paper just read he had taken twenty-five years, and also allowed an extra 3,000,000*l.* a year for more favourably situated lands. In almost all former agricultural valuations which he (Mr. Harris) had studied he had found numerous double entries: first the crops had been valued, then the cattle, and then the milk, &c. Now it must be evident that the milk, and the meat, and the wool were all produced by the food, and if both were valued, the same thing was valued twice over. The most ridiculous estimates were perhaps those of the United States. It was these double entries that he had tried to avoid. He wanted also to avoid the necessity of calculating what proportion of the meat, milk, &c., was made from foreign food apart from English; for if all were valued as our own agricultural production, we should value the foreign cattle food used, besides the crops of England, and thus the foreign crops would appear as British produce. He found that, as a farmer himself, he did not make any more at the present prices by producing beef, mutton, and dairy produce than if he had sold the crops as soon as harvested, even at the present low prices. On pork and poultry there might be some profit besides the cost of food, and this he had allowed for. Twenty years ago he had made a profit by feeding cattle on home produced food, but he could not do so now that prices of meat had gone down. Not only from his own experience, but also from careful inquiries made elsewhere, he had come to the conclusion that a heifer and calf sold at the first calving for, say, 11*l.* to 12*l.*, which is about the average price to-day, had not paid for the value of its food. If therefore they valued what was grown on the land, they would probably rather over value than under value the agricultural produce of the country; and it was with the object of not under valuing, but with every assurance against double entry, that he had adopted the method set forth in the Appendix.

¹ I have since investigated the question of length of life in the two countries, and I find that at the age of 40 the expectation of life in France is twenty-eight years ("Statistique générale de la France," 1877-81), while in England it is only twenty-seven years at the same age. The age of 40 is the fairest one for our calculation where succession to property is the question. The result would show that the multiple for Great Britain would be if anything rather less than for France.

MISCELLANEA.

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I.—*Asymmetrical Correlation between Social Phenomena.*
By PROFESSOR F. Y. EDGEWORTH, D.C.L.

IN a recent number of the Journal¹ I showed that correlated phenomena tend to be grouped according to a simple law which may thus be restated. If there be two (or *mutatis mutandis* more) measurable phenomena correlated, like the marks in Latin and Greek of a candidate at an examination, or the expenditure on tea and sugar in a family budget, the probability that any two particular values of each phenomenon, the one deviating by x , the other by y , from the averages of the respective phenomena, should concur, is proportioned to the constant e ($= 2\cdot718 \dots$) raised to the power $ax^2 + 2hxy + by^2$; where a, h, b , are constants proper to the subject matter. Whence I deduced an answer to the objection which has been made in high quarters to the determination of a *type* representing an organic whole which consists of several organs or attributes. The average values of the respective organs put together form the type.

I propose now to state some modifications of the theory and the rule which are required when the agencies to which a phenomenon is subject are such as to produce a greater deviation on one side of its average than on the other.² To begin with the simple case of a single phenomenon fluctuating under the influence of numerous independent agencies; the general rule is that the frequency of any value distant x from the average value is proportioned to $e^{-\frac{x^2}{c^2}}$ where c is a constant.³ But if by way of second approximation account is taken of the want of symmetry in the agencies at work, this standard form must be corrected. If the asymmetry is slight, the corrected form is

$$\frac{1}{\sqrt{\pi}c}e^{-\frac{x^2}{c^2}} \left(1 - \frac{2j}{c^3} \left[\frac{x}{c} - \frac{2}{3} \frac{x^3}{c^3}\right]\right)$$

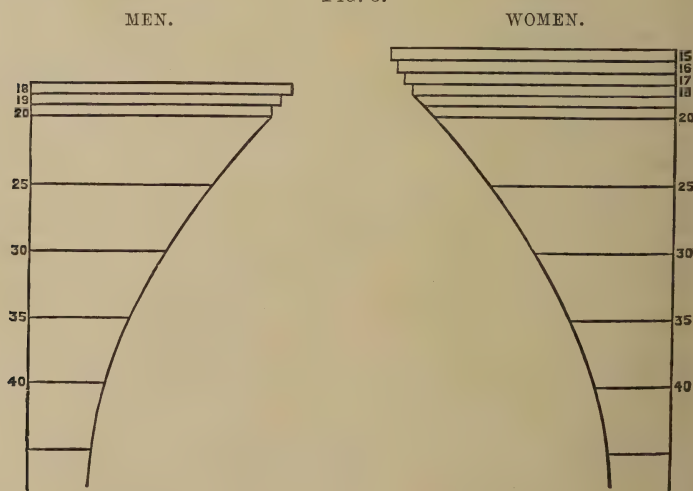
where j is a coefficient which vanishes when symmetry prevails.⁴ And, if the asymmetry is considerable, the deformation of the standard form is more marked.

¹ Vol. lvi, part 4, December, 1893, p. 670.
² For the proof of the following propositions, see the present writer's paper on the *Asymmetrical Probability-Curve* presented to the Royal Society, June, 1894.
³ See *Methods of Statistics*, Jubilee volume.
⁴ It is the mean *cube* of error.

Extending the analysis to the case of two correlated phenomena, we find that the surface expressing the frequency of their concurrence is no longer symmetrical, but rather shaped like (the upper half of) a pear. The following properties of this asymmetrical surface deserve notice. It is no longer true that every vertical section of the surface is a probability-curve even of the asymmetrical sort. Nor is the locus of correlated or "relative" values now a straight line as in the case of symmetry,⁵ but a parabola in the case of slight asymmetry, or in more extreme cases even more distorted from the right line. Nor do the *arithmetic mean* and *greatest ordinate* any longer coincide, so that caution is required in taking either of those averages as the type.

I subjoin an example which is of social as well as mathematical interest: the correlation between the ages of the parties to a marriage. Measuring the age of the bridegroom on the axis x , and that of the bride on the axis y , we might expect that z , the frequency of marriage, would trace out a probability-surface. But it is to be feared that the plurality of independent causes of the same order of magnitude,⁶ which is the essential condition for the fulfilment of the law of error, may be interfered with by the action of one predominant circumstance, viz., the continually decreasing number of marriageable persons at each age: a number on which the frequency of marriages at that age must largely depend. I propose to show how this disturbing influence may be eliminated, referring, in order to fix the ideas, to a particular instance, the statistics of Italian marriages which have been discussed by Signor Perozzo in the *Annali di Statistica* (series 3, vol. v), and are familiarised to the English student by the splendid stereogram exhibited in the rooms of the Statistical Society.

FIG. 3.



⁵ See the preceding paper, p. 671.

⁶ Ibid., p. 672.

Let us imagine the marriageable persons in the country marshalled in two hosts confronting each other, as in the annexed figure; with columns of various depth corresponding to the number of marriageable persons at each age (beginning at 15 for women, 18 for men, as in the statistics referred to). And let us figure the influences at work by imagining that wives are obtained, according to the customs of primitive marriage, by being as it were shot down. Then in any male columns, x , one archer is as likely as another to be successful; abstraction being made of all distinctions except that of age. And in any female column, y , one individual is as exposed to fire as another. Let l_x be the size (proportioned to the depth) of column x , λ_y of column y . Then, in this new form of the battle between the Greeks and Amazons, if ${}_xM_y$ be the observed number of fatal wounds inflicted by the Greek column x on the Amazonian column y (during a certain short period), $({}_xM_y \div l_x) \times 1,000$ is the damage done (on an average) by any Greek regiment (1,000 strong) of column x to the Amazonian column y . This expression divided by λ_y and multiplied by 1,000, that is $({}_xM_y \div l_x \times \lambda_y) \times 1,000,000$, represents the impression made by any Greek regiment of column x upon any Amazonian regiment of column y .

Or whether is it easier to say that ${}_xM_y \div l_x \times \lambda_y$ is the probability that any assigned bachelor or widower, Signor P., will marry within a certain period (two years in the case referred to) any assigned spinster or widow, Signorina, or Signora, Q.

This result appears to disagree with that given by Signor Perozzo in his classical study of the subject in *Annali di Statistica*, series 3, vol. v, and embodied in the stereogram, which is placed in the rooms of the Statistical Society. I am unable to follow the reasoning on p. 183 of the paper referred to. At any rate for the purpose here in view, to obtain *coefficients of matrimoniality* not involving the number of marriageable persons at each age, it seems proper to substitute for the sixth table, which embodies Signor Perozzo's final results, a table derived as follows from the preceding materials. His first table, giving the number of marriages at each age, our ${}_xM_y$; and his fifth table—the product of his third and fourth—giving, in our symbols, ${}_xM_y^2 \div (l_x \times \lambda_y)$; divide each entry in his fifth table by the corresponding entry in the first table in order to obtain the required table. The Secretary of the Statistical Society has kindly had this operation performed; the coefficients calculated under his directions are presented in the subjoined table:—

Table showing the Comparative Probability that a particular Man of G

Age of Bride-groom.	Age of Bride.									
	15—16.	16—17.	17—18.	18—19.	19—20.	20—21.	21—22.	22—23.	23—24.	24—25.
18—19....	0·070	0·139	0·235	0·340	0·405	0·409	0·330	0·264	0·288	0·288
19—20....	0·138	0·315	0·471	0·678	0·959	0·914	0·798	0·772	0·785	0·785
20—21....	0·273	0·636	0·941	1·598	2·235	2·651	2·190	2·086	1·433	1·111
21—22....	0·442	0·963	1·811	2·935	4·153	5·271	5·745	4·309	3·813	2·981
22—23....	0·573	0·969	2·245	3·952	5·806	8·097	8·463	9·536	7·068	5·111
23—24....	0·768	1·522	2·851	4·843	7·861	10·611	11·482	13·027	13·287	8·111
24—25....	0·880	1·950	3·570	6·303	9·597	14·362	15·655	18·539	16·984	16·111
25—26....	1·104	1·873	3·490	6·818	9·734	13·825	17·235	18·706	18·065	16·111
26—27....	0·867	2·134	3·632	6·746	10·504	16·109	17·373	23·920	22·580	20·111
27—28....	0·800	1·718	3·573	5·553	9·300	14·273	16·920	15·500	20·892	20·111
28—29....	0·551	1·300	2·628	5·523	8·029	12·281	14·851	19·683	20·036	20·111
29—30....	0·472	1·138	2·306	4·440	7·553	10·969	12·754	17·366	18·162	18·111
30—31....	0·425	0·824	2·116	4·040	6·276	11·967	12·328	16·928	17·208	17·111
31—32....	0·340	0·851	1·764	3·266	5·251	8·406	11·070	14·895	15·941	16·111
32—33....	0·479	0·800	1·643	3·032	5·333	8·404	10·623	17·083	15·568	17·111
33—34....	0·278	0·630	1·480	2·410	4·366	8·242	9·163	13·027	14·378	15·111
34—35....	0·222	0·547	1·082	1·958	3·753	6·280	7·753	11·639	13·605	15·111
35—36....	0·208	0·359	0·857	1·782	3·128	4·811	6·833	9·658	10·881	15·111
36—37....	0·217	0·312	0·935	1·435	2·251	4·012	5·475	8·180	9·272	15·111
37—38....	0·091	0·323	0·596	1·076	2·013	3·300	4·951	6·942	7·830	15·111
38—39....	0	0·269	0·511	1·056	1·656	2·661	3·640	5·167	7·045	15·111
39—40....	0·091	0·167	0·358	0·758	1·253	2·070	2·877	4·355	5·266	15·111
40—41....	—	0·125	0·296	0·500	0·974	1·795	2·135	3·579	4·323	15·111
41—42....	0	0·167	0·292	0·346	0·605	1·247	1·702	3·240	3·179	15·111
42—43....	0	0·200	0·182	0·318	0·717	1·257	1·617	2·890	3·986	15·111
43—44....	0	0·333	0·167	0·348	0·744	1·070	1·333	1·908	3·078	15·111
44—45....	0	0·167	0·167	0·300	0·500	0·900	1·288	1·662	2·162	15·111

Note.—The maximum in each horizontal row is in heavy type. The maximum in

ge should Marry within Two Years a particular Woman of Given Age.

Age of Bride.										Age of Bride- groom.
5-26.	26-27.	27-28.	28-29.	29-30.	30-31.	31-32.	32-33.	33-34.	34-35.	
0'091	0'182	0'154	0'111	0'083	0'071	—	0'111	—	—	18-19
0'448	0'495	0'298	0'235	0'143	0'186	0'133	0'133	0'143	—	19-20
0'941	0'895	0'758	0'519	0'452	0'363	0'191	0'276	0'154	0'211	20-21
0'307	1'901	1'386	1'311	0'792	0'685	0'648	0'510	0'372	0'323	21-22
0'072	3'395	2'662	2'212	1'602	0'827	0'960	1'000	0'935	0'734	22-23
0'590	5'971	4'970	3'795	2'856	2'336	1'786	1'627	1'278	1'000	23-24
0'941	9'732	7'825	5'877	4'557	3'444	2'823	2'527	2'044	2'148	24-25
0'630	12'673	10'932	8'364	5'925	4'900	3'781	3'871	2'936	2'184	25-26
0'524	20'410	16'461	11'623	8'738	6'564	5'160	4'502	3'505	3'086	26-27
0'331	19'378	19'809	13'991	10'806	7'922	6'536	6'557	4'891	3'879	27-28
0'129	20'380	19'350	18'204	11'849	9'549	7'301	6'768	5'745	3'868	28-29
0'006	19'257	19'135	16'907	16'069	10'664	8'972	7'826	6'038	4'819	29-30
0'85	19'973	21'030	19'482	16'416	14'671	11'425	9'898	9'282	6'881	30-31
0'492	18'178	20'361	18'976	15'683	12'975	13'678	11'207	10'031	7'411	31-32
0'520	19'117	21'498	19'528	16'907	17'674	15'414	18'323	13'317	13'552	32-33
0'512	19'307	21'519	21'955	18'131	16'549	16'845	16'602	17'227	10'796	33-34
0'275	18'137	19'781	19'070	17'650	16'064	16'356	16'925	15'832	13'349	34-35
0'990	14'931	17'230	17'282	17'939	16'203	14'962	16'431	14'524	13'100	35-36
0'464	15'360	15'804	16'572	15'667	14'511	15'212	15'250	15'041	13'517	36-37
0'921	12'446	17'700	15'080	13'931	12'298	15'594	15'984	16'465	12'821	37-38
0'958	11'711	13'527	16'107	13'713	13'807	13'723	13'474	15'731	13'883	38-39
0'349	8'578	8'059	12'035	13'683	12'080	12'938	13'785	15'661	12'781	39-40
0'111	8'982	10'395	11'224	9'185	11'837	12'724	14'065	14'393	9'861	40-41
0'935	6'703	7'832	9'694	9'365	9'328	11'150	12'363	12'715	11'138	41-42
0'726	7'128	8'304	7'975	9'564	9'458	10'007	13'818	13'976	11'116	42-43
0'44	5'538	7'804	8'757	10'018	10'518	10'600	12'415	15'280	12'453	43-44
0'48	3'736	6'461	7'790	6'939	9'094	10'580	9'833	9'523	12'255	44-45

ical column is in italics. When the two coincide the maximum is in *heavy italics*.

In this table any entry—*e.g.*, 1·598 in the fourth column and third row—signifies that the probability of a particular man aged 20—21 marrying a particular woman aged 18—19, all attributes except age being left out of account, is $1·598 \div$ the sum of all the figures in the table.

The locus of the age of one consort corresponding to an assigned value of the age of the other is for the higher ages at least curvilinear. The correlation seems to be slight for ages which are not extreme.

Again the arithmetic mean and the greatest ordinate, both in the case of husband's age and wife's age, do not coincide. I infer this without taking the trouble of averaging the whole set of figures, from observing that the coincidence fails in particular rows and columns. Thus the arithmetic mean for the row containing the maximum frequency is 25·2; while the position of the greatest ordinate is 22·5 (22—23). The type defined as the position of greatest frequency is still theoretically determinate and unique; but no doubt some practical difficulty in determining it is occasioned by its not coinciding with the arithmetic mean.

The human interest of these coefficients of matrimoniality will become evident if we attempt to estimate what Quetelet would call the *penchant* towards marriage at different ages (*Physique Sociale*, book iv, chap. 2). We should conclude that this tendency decreases with age much more rapidly than is really the case, if we contented ourselves with the unmanipulated statistics. Thus, comparing the *number of marriages* between men aged 24 and women aged 22 with the number of marriages between parties respectively twelve years older, we find that the former number is about *twenty* times greater than the latter. But if we compare the *matrimonialities* for the ages specified, the ratio is about 1·3 : 1. Elderly people marry so little principally for the same reason as that for which black sheep eat so little: there are so few of them.

II.—Agricultural Returns of Great Britain, 1894.

Preliminary Statement compiled from the Returns collected on the 4th June, 1894, showing the Increase or Decrease on the Returns for the Years 1893 and 1892 respectively.

A. 1894 compared with 1893.

Crops and Live Stock.	1894.	1893.	Increase.	Decrease.	Increase.	Decrease.
	Acres.	Acres.	Acres.	Acres.	Per cent.	Per cent.
Wheat.....	1,927,962	1,897,524	30,438	—	1·6	—
Barley.....	2,096,034	2,075,097	20,937	—	1·0	—
Oats.....	3,253,145	3,171,756	81,389	—	2·6	—
Potatoes	504,454	527,821	—	23,367	—	4·4
Hay, clover, and rotation grasses ..	2,121,904	2,047,008	74,896	—	3·7	—
„ permanent pasture	4,852,442	4,270,480	581,962	—	13·6	—
Hops	59,535	57,564	1,971	—	3·4	—

*Agricultural Returns. Preliminary Statement compiled from the Returns—Contd.**A. 1894 compared with 1893—Contd.*

Crops and Live Stock.	1894.	1893.	Increase.	Decrease.	In-crease.	De-crease.
	No.	No.	No.	No.	Per cent.	Per cent.
Cows and heifers in milk or in calf	2,460,086	2,554,624	—	94,538	—	3·7
Other cattle—2 years and above ...	1,516,672	1,580,242	—	63,570	—	4·0
„ 1 year and under 2	1,217,145	1,354,523	—	137,378	—	10·1
„ Under 1 year	1,153,210	1,211,287	—	58,077	—	4·8
TOTAL OF CATTLE.....	6,347,113	6,700,676	—	353,563	—	5·3
Ewes kept for breeding	9,668,002	10,128,676	—	460,674	—	4·5
Other sheep—1 year and above ...	6,342,730	6,911,063	—	568,333	—	8·2
„ Under 1 year.....	9,850,768	10,240,595	—	389,827	—	3·8
TOTAL OF SHEEP	25,861,500	27,280,334	—	1,418,834	—	5·2
Cows kept for breeding.....	351,119	308,722	42,397	—	13·7	—
Other pigs	2,038,907	1,804,808	234,099	—	13·0	—
TOTAL OF PIGS	2,390,026	2,113,530	276,496	—	13·1	—

B. 1894 compared with 1892.

Crops and Live Stock.	1894.	1892.	Increase.	Decrease.	In-crease.	De-crease.
	Acres.	Acres.	Acres.	Acres.	Per cent.	Per cent.
Wheat.....	1,927,962	2,219,839	—	291,877	—	13·1
Barley.....	2,096,034	2,036,810	59,224	—	2·9	—
Oats.....	3,253,145	2,997,545	255,600	—	8·5	—
Potatoes	504,454	525,361	—	20,907	—	4·0
Hay, clover, and rotation grasses ..	2,121,904	2,135,362	—	13,458	—	0·6
„ permanent pasture	4,852,442	4,489,626	362,816	—	8·1	—
Crops	59,535	56,259	3,276	—	5·8	—
	No.	No.	No.	No.	Per cent.	Per cent.
Cows and heifers in milk or in calf	2,460,086	2,650,891	—	190,805	—	7·2
Other cattle—2 years and above....	1,516,672	1,666,706	—	150,034	—	9·0
„ 1 year and under 2	1,217,145	2,627,186	—	256,831	—	9·8
„ Under 1 year.....	1,153,210					
TOTAL OF CATTLE	6,347,113	6,944,783	—	597,670	—	8·6
Ewes kept for breeding	9,668,002	17,957,049	—	1,946,317	—	10·8
Other sheep—1 year and above ...	6,342,730	10,777,655	—	926,887	—	8·6
„ Under 1 year.....	9,850,768					
TOTAL OF SHEEP	25,861,500	28,734,704	—	2,873,204	—	10·0
Cows kept for breeding.....	351,119	*—	—	—	—	—
Other pigs	2,038,907	*—	—	—	—	—
TOTAL OF PIGS	2,390,026	2,137,859	252,167	—	11·8	—

* Not separately distinguished in 1892.

III.—*Notes on Economical and Statistical Works.*

The History of Trade Unionism. By Sidney and Beatrice Webb. London: Longmans, Green, and Co., 1894.

Mr. and Mrs. Webb have in the volume before us accomplished with signal success a brilliant and difficult achievement. They have contrived to invest the history of trade unionism with a remarkable amount of interest. This is partly due to a journalistic smartness which they have brought to its treatment, and the headings of some of their chapters might be cited in illustration. The description of the leaders of the old unionism as "the Junta and their Allies," is but one example of their keen appreciation of the usefulness of a catching phrase. But their success is also partly due to the evident motive which inspires their work. They make no secret of their collectivist views, and they regard the new unionism, with its collectivist tendencies, as the natural outcome of forces which have been present through the whole history of the movement, and were only thrust into the background during the supremacy of the Junta. The assertion of the demand for a "living wage" is, they maintain, the traditional cry of unionism; and here, as throughout the narrative, it is not difficult to detect the motive which animates their work. It has, we believe, sometimes resulted in an excess or deficiency of emphasis; and we do not agree with all the opinions expressed. But we must recognise that the authors have, at any rate, the courage of their opinions, and that they have certainly made a valuable contribution to economic history. For their book is characterised by more solid and useful qualities than those we have already indicated. They have instituted and carried to a successful issue a thorough investigation of the records of trade unions throughout the length and breadth of the country. They have literally ransacked the available material, and they have reduced this vast mass with admirable skill into the compact form of a continuous and lucid story. In the course of this undertaking they have had occasion to correct some prevalent impressions, and to set in a new light some accepted traditions; and we are confident that their book will be regarded henceforth as "*the history of trade unionism.*"

In the first instance they reject the traditional view which connects the modern trade union with the mediæval craft guild. Historically they have found no evidence of such a connection, and the analogy between the two forms of association is as remarkable for the points of difference as for those of similarity. The rise of modern trade unionism dates from the introduction of the capitalistic organisation of industry, and the severance of the wage-earner from the ownership of the instruments of production. This is sometimes associated with the industrial revolution which accompanied the great inventive changes at the close of the last and the opening of the present century, and was marked by the substitution of the factory for the domestic system. But rudi-

mentary traces of the capitalistic organisation of industry can be discovered before this period; and the rise of trade unionism, which appears as its inseparable accompaniment, dates in some industries from the commencement of the eighteenth century. The industrial revolution merely accelerated the pace at which the forces already in existence were operating. At first the unions endeavoured to restore the mediæval economy, with its regulation of apprenticeship and its authoritative determination of wages, and it was not for some time that Parliament viewed these attempts with any other feeling than tacit sympathy, if not active encouragement. But the attitude of Parliament, as time went on, unconsciously changed. It was impressed, no doubt, by the arguments advanced by the employers in the industries which were undergoing the changes, to show that an attempt to restore the mediæval economy would be fatal to manufacturing development; and, at last, that economy was swept away so far as it protected the workmen. But it remained in force to prevent their combination for mutual protection, although even here it was not until the very end of the century that Parliament regarded with disapproval combinations which only sought to enforce the legal regulation of industry. Even when the general combination law was passed, the "struggle for existence," as Mr. and Mrs. Webb term the period from 1799 to 1835, was attended by bitter and violent incidents only in the new textile industries. But their efforts were supported by the more prosperous older industries; and the repeal of the laws was brought about in 1824 by the tactics of an agitator of remarkable dexterity and shrewdness, whom Mr. and Mrs. Webb have rescued from oblivion. This was Francis Place. The repeal was accomplished without attracting notice at the time, but the attention of Parliament and of the public was soon aroused, and, in spite of the renewed tactics of Place, the law was left in the anomalous position in which it remained for half a century more—that a concession granted with the one hand was virtually withdrawn with the other. This half century may be divided into two periods—the earlier, extending to the failure of the Chartist agitation, being an epoch of ambitious attempts at gigantic federation in a trades union, and of schemes for the general reconstruction of society; and the latter a period of discreet policy and peaceful concentration, which culminated in the legal establishment of trade unions, after the extension of the suffrage to the workmen in the towns. Mr. and Mrs. Webb describe the first of these epochs in their chapter on the "Revolutionary Period," and the second they trace in three chapters: one on the "New Spirit and the New Model," a second on the "Junta and their Allies," and the third on "Sectional Developments." In a succeeding chapter, entitled the "Old Unionism and the New," they continue the history from 1875 to 1889, and in the concluding chapter they attempt a survey of the actual numbers of unionists. In a second volume they propose to deal with various problems of the future, but in the present they have in the main been content to describe the history of the past. And this they have done, not without the intrusion of their own

personal views, but with remarkable lucidity, thoroughness, and point.

The Unemployed. By Geoffrey Drage. London: Macmillan and Co., 1894.

This is, we believe, the first of a series of volumes which may be expected from the pen of the Secretary of the Labour Commission on various topics that have come under his observation while discharging the important duties of his office. He has certainly enjoyed almost unrivalled opportunities for surveying the whole field of industry, and has no lack of material on which to draw. In the present volume, after a preface, in which he criticises with a severity which is not free from exaggeration or even animus, the Blue Book issued by the Labour Department on the same subject, he discusses the problem of the unemployed in four successive parts. In the first he treats of the proper classification of the agencies which deal with the question. In the second, following this classification, he inquires what has actually been attempted and effected by these various agencies. The first class includes those whose object it is to find work for the unemployed, and comprises trade unions and friendly societies, labour bureaux, agencies for discharged seamen, soldiers, and prisoners, registries for women and girls, and newspapers. The second class is appropriated to those agencies whose object is to make work, whether they be of a permanent or temporary character. The permanent agencies include such attempts as the workshops and farm of the Salvation Army, and the Labour Colonies of the Continent, the temporary comprise enterprises undertaken by municipal and other authorities at times of peculiar distress. In the third part Mr. Drage proceeds to investigate the nature and causes of the present distress, and in the fourth and concluding part to consider and suggest what can be done to solve the problem. He arrives at the conclusion, to which prolonged examination of any social problem generally brings the candid inquirer, that the matter must be attacked by various methods, and that no panacea can be discovered, which can be universally applied.

The Natural Law of Money. By William Brough. London: G. P. Putman's Sons, 1894.

The view of the author of this book, if we understand him aright, is that governments should abstain altogether from interference with monetary systems, and should allow the instincts and preferences of the individual to determine and adopt the most natural arrangement. He does not believe in the ability of government to force money into circulation, and he holds a strong opinion on the mischief of such an attempt. It is in this spirit that he urges that the use of money itself in its rudimentary forms as a substitute for barter has grown up, and that men have passed from the employment of one kind of money to another. It is from this point of view also that he passes judgment upon bimetallism and monometallism, which he prefers as being of a

less "mandatory" character; upon paper money, whether convertible or, as in the old Colonial Period of America, inconvertible; upon the monetary system of Canada as compared with the less unrestrained arrangements of the United States; and upon the more recent silver legislation in the latter country, of which he naturally disapproves. It is from this standpoint lastly that he examines the American hoarding panic of July, 1893.

Municipal Taxation at Home and Abroad. By J. J. O'Meara. London: Cassell and Co., 1894.

The question handled in this volume is, as the author points out, one of increasing importance; for the growth of local indebtedness bids fair to push imperial indebtedness into the background, and the duties and powers of municipal authorities are year by year becoming larger and larger. Mr. O'Meara attempts to survey the existing position both in this and the other chief countries of the world. In the first chapter he examines into the general characteristics of local government and local indebtedness, and supplies figures showing the extent and the growth of the latter. In the second chapter he investigates the sources from which local taxation is derived, and the real incidence of its burden. He notices the complaint so often raised of the exemption of personalty from local rates, and in the third chapter he considers another common grievance connected with the systems of valuation adopted, and in the succeeding chapter he takes up a further topic of frequent discussion—the question at issue between owner and occupier. In his fifth chapter he proceeds to the suggestion of remedies, which are directed for the most part to an altered distribution of the burden between owner and occupier, and to the relief of realty by the taxation of personalty, by municipal death duties, and by an adjustment of the income tax. In the remaining chapters of the book he reviews the systems obtaining in the United States, in France, Germany, Austria, Switzerland, Belgium, the Netherlands, Denmark, Italy, Sweden and Norway, Russia, Poland, Spain, Turkey, and Greece. It will be seen that the book covers a wide field, and that it forms an useful compendium of information on a subject of great immediate interest. Mr. O'Meara appears to be as candid and fair as he is lucid and well-informed.

La Criminalita e le Vicende Economiche d'Italia dal 1873 al 1890. Di Ettore Fornasari di Verve. Con Prefazione di Cesare Lombroso. Torino: Fratelli Bocca, 1894.

This book affords fresh testimony to the activity of the Italian school of criminal anthropology. It is enriched with a preface from the pen of the distinguished head of the school, Professor Lombroso; and it is devoted to the economic rather than, like many of the publications of the school, to the physical aspects of the question. It treats of the connection of economic conditions and changes with the growth and decline of crime. In the first chapter the author approaches his subject from what he distinguishes as its statical side, and in the second he turns to the dynamical side. In the first the distribution of wealth in Italy

is shown, the connection of poverty with crime is examined, the predisposing and the determining influences of misery are distinguished and investigated, and the wealth of the various districts of Italy and their respective criminality are displayed. In the second chapter the attention of the student is directed to the bearing of certain economic factors on crime. The influence of emigration, of the agrarian situation, of the prices of articles of consumption, of industrial changes, of the position of labour, of commerce and of credit, and of the growth of private wealth, is successively considered. In the third chapter the author deduces conclusions from the facts which he has examined, and demonstrates the important bearing of the economic factor on criminality. This is followed by various tables, and by some summary observations on the question as it presents itself in our own country and in New South Wales. The whole volume contains a mass of facts and of figures in their support, and forms an important contribution to the literature of the new Italian school, which is yearly attracting increased attention.

Journal of the Board of Agriculture. Vol. i, No. 1, September, 1894.

Following the example of the Board of Trade, the Board of Agriculture has just issued the first number of an official publication, which takes the shape of a quarterly Journal, price 6d. The general arrangement is similar to that of the Board of Trade Journal, as it consists chiefly of short articles on agricultural questions, and records of agricultural experiments from various foreign and colonial sources, reports of crop prospects abroad, notes, extracts from diplomatic and consular reports, with statistical tables. Considerable space is devoted to injurious insects and fungi, concerning which the Board has been accustomed to publish leaflets at various times. It is not proposed to discontinue the issue of leaflets on questions of urgency, but they, as well as those on other subjects, will be printed in the Journal for greater convenience of reference. The statistical tables at the end include several new features of great interest, such as summaries of the returns collected under the recent Weighing of Cattle Acts respecting the total number of cattle, sheep, and swine entering certain markets in Great Britain, the number weighed, and details of the live weight prices per stone and cwt., obtained; wholesale prices of butter, margarine, cheese, fruit, vegetables, as well as meat (all these being taken from various periodicals); and statistics of the number of animals in the United Kingdom affected with pleuro-pneumonia, swine fever, anthrax, glanders, or rabies. Records of the official prices of corn are given in a comparative form. The agricultural returns of acreage and of live stock for 1894, reproduced on p. 568, are from the new Journal, the figures for the counties of Great Britain being thus rendered available for wheat, potatoes, hay, and live stock nearly two months earlier than in recent years.

Statistical and Economical Articles in Recent Periodicals.

UNITED KINGDOM—

Economic Journal. Vol. iv, No. 14, June, 1894—

Results of the Retail Liquor Traffic without Private Profits:
J. G. Brooks. Banking in Canada: *B. E. Walker.* Ricardo
 in Parliament (Part I): *E. Cannan.* The Indian Currency
 Question: *F. C. Harrison.*

Economic Review. Vol. iv, No. 3, July, 1894—

The Co-partnership of Labour: *H. Vivian and A. Williams.*
 Co-operative Credit: *H. W. Wolff.* Town Life in the
 Fifteenth Century: *Alice Law.*

UNITED STATES—

Actuarial Society of America. No. 11, April, 1894—

A Life Table based upon Insurance in the American Tropics:
C. N. Jones.

American Statistical Association Publications. Vol. iv, New Series,
 Nos. 25 and 26, March, June, 1894—

The Marriage-rate in Michigan, 1870-90: *W. F. Willcox.*
 The Classification of occupations for census purposes:
H. Gannett. Nativity and occupation of Members of the
 Massachusetts Legislature: *F. H. Howland.* The Sex
 Relation in Suicide: *F. L. Hoffman.* The Growth of
 St. Louis Children: *W. T. Porter.*

Annals of the American Academy of Political and Social Science.
 Vol. v, No. 1, July, 1894—

Future problem of Charity and the Unemployed: *J. G.*
Brooks. Peaceable Boycotting: *C. A. Reed.* Significance
 of a Decreasing Birth-rate: *J. L. Brownell.* Rent and
 Profit: *C. W. Macfarlane.*

*Supplement, July, 1894—*The Theory of Sociology: *F. H. Giddings.**Journal of Political Economy.* Vol. ii, No. 3, June, 1894—

Monetary Standards: *J. Cummings.* Homestead Strike:
E. W. Bemis. Apprentice system in the Building Trades:
G. C. Sikes. Pacific Railway Debts: *H. K. White.*

Political Science Quarterly. Vol. ix, No. 2, June, 1894—

The Pacific Railroad Telegraphs: *L. C. Merriam.* The Rail-
 way Gross Receipts Tax: *Prof. F. J. Goodnow.* Origin of
 Standing Committees: *Prof. J. F. Jameson.* British Local
 Finance. II: *G. H. Blunden.*

Quarterly Journal of Economics. Vol. viii, No. 4, July, 1894—

The Theory of Wages adjusted to recent Theories of Value:
T. N. Carver. The English Railway Rate Question:
J. Mavor. The Civil War Income Tax: *J. A. Hill.* The
 Unemployed in American Cities. II: *C. C. Closson, jun.*

Yale Review. Vol. iii, No. 2, August, 1894—

The limitations and difficulties of Statistics: *C. D. Wright.*
 Theories of mixture of races and nationalities: *R. Mayo-*
Smith. The Bimetallic Theory: *H. W. Farnam.*

FRANCE—

Annales de l'Ecole Libre des Sciences Politiques. No. 4, July, 1894—

Les Variations du Revenu et du Prix des Terres en France au xvii^e et au xviii^e siècle: *D. Zolla*. De l'association en France (aperçu général): *F. de Colonjon*. L'Evolution industrielle de l'Inde. Contribution à l'étude du développement de la Grande Industrie dans l'Extrême Orient: *H. Bremier*.

Journal des Economistes—

May, 1894—

Le Socialisme en Angleterre, d'après une récente publication anglaise: *E. L. Fleury*. La Caisse des retraites ouvrières et le projet de la Commission: *E. Rochetin*. Les Placements en Angleterre: *A. Raffalovich*.

June, 1894—

L'Etat et la Société. Le Socialisme et l'Individualisme: *M. Block*. (Concluded in the August No.) La Question des Vins: *J. Charles-Roux*.

July, 1894—

Les Banques aux Etats-Unis: *G. François*.

August, 1894—

Les Dettes publiques Russes de 1862 à 1894: *L. Winiarsky*.

Journal de la Société de Statistique de Paris—

No. 6. June, 1894—

Etude comparative du mandat de poste français et du mandat de poste en Suisse, en Belgique, en Allemagne et en Autriche: *M. Vannacque*.

No. 7. July, 1894—

L'Archéologie, son domaine et son influence sur les progrès matériels et moraux du xix^e siècle: *A. Nicaise*. La Statistique du travail en Allemagne: *A. Liégeard*.

No. 8. August, 1894—

Répartition de la propriété non bâtie en France: *Yves Guyot*. La Productivité de l'administration de l'enregistrement, des domaines et du timbre: *L. Salefranque*.

No. 9. September, 1894—

Le crime et le criminel devant le jury: *E. Yvernès*. La question des assurances agricoles au point de vue de la statistique: *A. Thomereau*.

La Réforme Sociale—

No. 83. 1st June, 1894—

Une Enquête patronale à propos des logements ouvriers à Berlin: *E. Dubois*.

No. 84. 16th June, 1894—

L'Evolution et les Trois Formes de la Féodalité en France: *A. des Cilleuls*. Le Socialisme et l'Industrie: *A. Gibon*.

No. 85. 1st July, 1894—

La Société d'Economie sociale et les Unions en 1893-94: *A. Delaire*. Les Devoirs et les Profits des Patrons: *E. Aynard*.

FRANCE—*Contd.*

La Réforme Sociale—Contd.

Nos. 86 and 87. 16th July and 1st August, 1894—

Du rôle éducatif, économique, et moral des institutions de Crédit populaire Urbain et Rural: *E. Rostand*. La Régie des Alcools en Suisse et l'alcoolisme: *Jules d'Anethan*.

Nos. 88 and 89. 16th August and 1st September, 1894—

Les Syndicats ouvriers aux Etats-Unis: *I. Finance*. De la répression de la Mendicité et du Vagabondage, d'après la loi belge du 27 Novembre, 1891: *L. Pussemier*. Les Assurances mutuelles du Bétail et le Cheptel parmi les Fermiers et Paysans du Sud-Ouest de la France et du Nord de l'Espagne: *M. Wentworth-Webster*.

Revue d'Economie Politique—

June, 1894—

Essai sur la Valeur: *E. de Böhm-Bawerk*. La mutualité et l'assistance sociale: *E. Fournier de Flaix*. Etude sur la durée de la Garantie d'intérêts promise par l'Etat aux Compagnies des chemins de fer d'Orléans et du Midi: *H. St. Marc*. (*With an Appendix in next number.*)

July—August, 1894—

Travail des Femmes et des Enfants à New-York: *Anna S. Daniel*.

GERMANY—

Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft im Deutschen Reich. (Abteilung I.) Heft 3. 1894—

Der deutsche Beamtenstaat vom 16—18 Jahrhundert. Rede gehalten auf dem deutschen Historikertag zu Leipzig am 29 März, 1894: *G. Schmoller*. Die Lage der deutschen Seefischerei: *L. Bartels*. Die Kleinbahnen und die Mittel ihrer Förderung. Vortrag gehalten in der Berliner Staatswissenschaftlichen Gesellschaft: *Gleim*. Die geschichtlichen Ursachen der irischen Agrarverfassung: *M. Jaffé*. Die amtliche Arbeiterstatistik des Deutschen Reichs: *H. von Scheel*. Die Reform unserer Socialversicherung: *W. Kulemannn*. Österreichische und deutsche Arbeiterversicherung: *P. Köhne*. Die preussische Agrarkonferenz: *M. Sering*. Statistik der jugendlichen Fabrikarbeiter: *K. Oldenberg*.

Jahrbücher für Nationalökonomie und Statistik. Dritte Folge—

Band vii. 1894. Heft 6—

Depositenbildung in England und in Deutschland: *O. Glauert*. Das Familienfideikommiss in Ungarn: *Béla Földes*. Die zweite Lesung des Entwurfes eines Bürgerlichen Gesetzbuches für das Deutsche Reich: *Greiff*. (*Continued in Band viii, Heft 1 und 2.*) Zur Agrarfrage: *G. Ruhland*.

Band viii. 1894. Heft 1—

Vor- und Rückblicke auf Zunftzwang und Gewerbefreiheit: *K. von Rohrscheidt*. Die Beschränkungen der Parzellierungsfreiheit in Sachsen, Sachsen-Altenburg, und Württemberg: *K. Mamroth*.

GERMANY—*Contd.*

Jahrbücher für Nationalökonomie und Statistik. Dritte Folge—Contd.

Band viii. 1894. Heft 2—

Die Mortalitätsverhältnisse der Lehrer nach den Erfahrungen der Lebensversicherungsbank f. D. in Gotha: *J. Karup und R. Gollmer. Das Papiergeld der Zukunft: W. Lexis. Die Fürsorge für die Arbeitslosen in England: M. von Heckel.*

Zeitschrift für Litteratur und Geschichte der Staatswissenschaften.

Band iii. 1894—

Heft 1 und 2—

Auf dem Wege zur Gewerbefreiheit in Preussen: *K. von Rohrscheidt. (Continued in Heft 3.)* Lehrsätze über die ökonomischen Kategorien: *Prof. P. W. A. Cort van der Linden.*

Heft 3—

Zur Biographie des Stifters der Physiokratie, François Quesnay: *Prof. A. Oncken.*

Zeitschrift für die gesamte Staatswissenschaft. Heft 4, 1894—

Deutschlands Holzbedarf: *Dr. R. Zimmermann. Ueber die weitere Entwicklung des Gemeinde-Steuerwesens auf Grund des preuss. Kommunalabgabengesetzes vom 14 Juli, 1893. II Artikel: F. Adickes. Ueber das nahende Ende der auswärtigen Getreidekonkurrenz: Dr. G. Ruhland.*

AUSTRIA—

Statistische Monatschrift, 1894—

May—June—

Die Vermögensgebarung der katholischen und der griechisch-orientalischen Kirche in den im Reichsrathe vertretenen Königreichen und Ländern im Jahre 1890: *Dr. F. Schmid. Ueber die Construction von Mortalitätstafeln: Dr. E. Blaschke. Die Statistik der Realexecutionen in Oesterreich im Jahre 1891. Oesterreich-Ungarns Aussenhandel im Jahre 1893: J. Fizzala. Der Wildabschuss in Oesterreich im Jahre 1892: Dr. R. v. Tomaschek.*

ITALY—

Giornale degli Economisti—

June, 1894—

Il riordinamento delle borse di commercio: *G. Valenti. (Continued in August and September, 1894.)* Il Socialismo nelle pubblicazioni della "Fabian Society:" *H. W. Mallock.*

July, 1894—

Le esportazione dei principali prodotti agrari dall' Italia nel periodo 1862-92: *L. Einaudi. L'emigrazione italiana nell' Europa centrale e orientale: P. Sitta. Il massimo di utilità dato dalla libera concorrenza: V. Pareto.*

ITALY—Contd.

Giornale degli Economisti—Contd.

August, 1894—

L'indirizzo teorico nelle scienza finanziaria: *C. A. Conigliani*.Nota: Di una confederazione fra i Monti di pietà del regno e di un ufficio centrale di collegamento: *A. Fanelli*.

September, 1894—

Sulla "Consumers' Rent:" *E. Barone*. La dottrina politico-economica di Fr. Ferrara: *D. Berardi*.

IV.—Additions to the Library.

Additions to the Library during the Quarter ended 15th September, 1894, arranged alphabetically under the following heads:—(a) Foreign Countries; (b) India and Colonial Possessions; (c) United Kingdom and its Divisions; (d) Authors, &c.; (e) Societies, &c. (British); (f) Periodicals, &c. (British).

Donations.

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(a) Foreign Countries.

Argentine Republic—

Comercio Exterior Argentino, Año 1894. No. 81.	The National Statistical Department
Importacion y Exportacion de los primeros trimestres de 1893 y 1894. 8vo.....	
Higiene Publica. Anales de. (Current monthly numbers)	Dr. E. R. Coni
BUENOS AYRES (CITY). Bulletin mensuel de Statistique municipale. (Current numbers)	The Municipal Statistical Bureau

Austria-Hungary—

Ackerbau-Ministeriums. Statistisches Jahrbuch für 1893. Heft 1. Statistik der Ernte des Jahres 1893. Diagrams, &c. 8vo.	The Ministry of Agriculture
Anbauflächen der Zuckerrüben nach dem Stande vom 1 Juni, 1894. 8vo.	
"Austria." Archiv für Gesetzgebung und Statistik auf den Gebieten der Gewerbe, des Handels und der Schifffahrt. Hefte 5—7, 8vo. 1894.....	The Statistical Department, Ministry of Commerce
Ausweis über die monatl. Durchschnittspreise von Weizen, Korn, Gerste, Hafer, und Mais in Markorten für April, 1894. Sheet	The Central Statistical Commission
Consulats-Behörden. Jahresberichte der k. und k. österreichisch - ungarischen. (Current numbers). 8vo. 1894	
Handel. Statistische Übersichten betreffend den auswärtigen, des österreichisch-ungarischen Zollgebiets. (Current monthly numbers)	The Statistical Department, Ministry of Commerce
Handel. Waren- Ein-, Aus- und Durchführ im ersten Halbjahre 1894. 8vo.	
Oesterreichisches Statistisches Handbuch. Jahrgang 12, 1893. 8vo.	The Central Statistical Commission
Rechtspflege. Statistische Nachweisungen über das civilgerichtliche Depositenwesen, die cumulativen Waßencassen, und über den Geschäftsverkehr der Grundbuchsämter im Jahre 1889. Pol.....	

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(a) Foreign Countries—Contd.	
Austria-Hungary—Contd.	
Sparcassen. Statistik der, für 1891. Fol.	The Central Statisti- cal Commission
Strafanstalten und der Gerichts-Gefängnisse. Statis- tische Übersicht der Verhältnisse der österreichis- chen, im Jahre 1889. Fol.	
Statistische Monatschrift. (Current numbers)	
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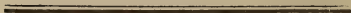
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JOURNAL
OF THE ROYAL STATISTICAL SOCIETY,
DECEMBER, 1894.

The RELATIONS between MORALS, ECONOMICS, and STATISTICS.

INAUGURAL ADDRESS of the RIGHT HON. LORD FARRER, PRESIDENT
of the ROYAL STATISTICAL SOCIETY. *Session 1894-95. DELIVERED*
20th November, 1894.

YOU are members of a Society whose business it is to collect facts rather than to discuss theories, and it is possibly on this account that you have conferred the honour of being your President on one, who, brought up at the feet of Cobden, Peel, and Bagehot, rather than of Mill and Ricardo, has learnt his most useful lessons from practical economists and statisticians; but who has often found in the narrow premises, the *à priori* reasonings and the absolute conclusions of what used to be termed the orthodox school of political economy, not so much a help as a stumbling block; one, who now finds even less comfort in the ambitious schemes which seek to establish a so-called Science of Humanity—schemes which scarcely recognise the value of any economic truth unless it can be fitted into its proper niche in that cloud-built temple; one, who fails to grasp the shadowy outline of the young giant now struggling into existence under the name of Sociology; one, finally, who finds least help or comfort of all in that branch of the new school which, having first appropriated to itself the title of Socialism, is now known under the less attractive name of Collectivism, and which, whilst rivalling the most dogmatic of the old economists in its *à priori* methods and in its absolute conclusions, founds those conclusions on premises less true and on reasonings less accurate than theirs were.

To your present President it seems that in those branches of knowledge with which your Society is concerned, those branches, namely, which are concerned with human actions and dealings, we are, as in the case of other branches of knowledge, creatures trying with feeble vision to see ever a little and a little more into the surrounding atmosphere of darkness—children picking up pebbles on the shore, and happy, if by means such as your Society affords, we can only pick up some of the right pebbles.

But whilst thus abjuring *à priori* methods and artificial systems, it is desirable to keep before our minds what are the special tasks we are undertaking, and what relation they bear to other departments of human thought and activity. These tasks consist in finding materials and methods for the moralist, the reformer, and the statesman. Human action is a concrete thing, and when, for the purpose of understanding it the better, we analyse the various motives from which men act and the consequences of their actions, the several parts or branches to which our analysis leads are not *in rerum naturâ* separate and independent entities, but essential parts of one organic whole. The mental attitudes to which we give such names as religion, emotion, affection, prudence, self interest, regard for others, are in each human act which they affect as inextricably intertwined as the strands of a rope. No act of legislation or statesmanship, no matter of ordinary business, no act or habit of family life, is the result of any one of these factors singly; and any practical view of any department of life, from a sermon to a joint company report, which is founded on one of them to the entire exclusion of the rest, would be found to be intolerably incomplete and one-sided.

At the same time, for the purpose of getting clearer views we find it necessary to untwist the rope, to take human action and its motives to pieces, and to regard each strand or piece as if it existed by itself. In fact we perform a sort of mental or spiritual dissection, and investigate the various motives and effects of human action, as a physiologist dissects and investigates the muscles and nerves of the body. It is only natural that in a process of this kind each investigator, intent on his own particular part of the subject, should occasionally lose sense of perspective and proportion, and that an admiring school of pupils should elevate into an absolute whole what is only true of a part, and that only when it is kept in due relation to other parts.

This has, I think, been the case with Political Economy. It has been taken to be much more than it is; more than it can claim to be. Whether this be so or not, there can be no doubt of the fact that there has been a great revolt against it. The science which in our youth we were taught to accept almost as a revelation, seems to be in danger of being swallowed up by the somewhat amorphous entity which claims the title of Sociology or Social Science. It would be superfluous in addressing my present audience to attempt to trace the history of this change of opinion, and I will only illustrate it by comparing with the present state of thought on the subject the observation of one of the best read economists and one of the clearest headed men I ever knew, who said to me not many years ago, "We have settled almost

"all economical problems, but the land question still remains "unsettled, and is a reproach to our science." His saying seems to me now like an echo out of a by-gone world. Compare with this the extremely interesting address given by Mr. Goschen to the British Economic Association in June of last year.¹ To men whose remembrance extends back fifty years that address was very affecting. It recognised in the fullest way the breach between the old dogmatic political economy and modern thought and feeling; it treated the breach as one between economics and ethics, and it endeavoured to bridge the gap. To my mind it was too apologetic. It almost admitted that political economy might be in conflict with moral sentiment, and defended economical science on the ground that it really was, in the hands of those who understood it, a longer sighted form of ethics, looking to ultimate results which can only be judged of by reasoning, rather than to immediate results which appeal directly to feeling. It instanced, if I remember right, the way in which economical thought corrects the charitable impulse to give to a beggar, and justified political economy by its ultimate satisfaction of the moral sense. It treated ethics and economics as if they were on the same plane, and as if the problem were to draw accurately the boundary line between them. Now I venture to think that if we are to analyse and distinguish at all, this is not the true principle of distinction. It seems to me that whatever may be said of sociology or social science, and however strong may be the links by which that science, if there be such a science, connects ethics and economics, yet that in the present state of our knowledge ethics and economics are on a different plane, and that they cannot conflict because they never meet.

Ethics, as it seems to me, is the science and art of duty, that branch of human thought and feeling which, as a science, investigates the source and meaning of our conceptions of duty, and as an art teaches what we ought to do, or at any rate what we ought to aim at. Economic science, on the other hand, has nothing to do with duty. It is not an art; it is not a code or system of laws. It is the branch of human knowledge which treats of the manner in which material wealth, or the titles which give a claim to material wealth, are produced and consumed or distributed; it endeavours to ascertain the laws and conditions under which this production and consumption or distribution takes place; and it points out that a certain course of action will have such and such effects on production, consumption, and distribution. It does not profess to give an aim or object; it simply states certain general conclusions concerning the effects on wealth which will be produced

¹ See "Economic Journal" of September, 1893.

by any given set of circumstances or any given course of action. Ethics, in short, teach us what we ought to do in all spheres of conduct; economics teach us what can and what cannot be done in that large sphere of human conduct which relates to wealth.

Take the simplest cases. It is within the province of economics to tell us that men and families and nations who are weak and lazy are likely to starve. It is for ethics to tell us that such starvation will serve them right. It is for political economy to tell us that good work is not to be expected without good wages. It is for ethics to tell us that it is the duty of the employer to give adequate remuneration to those in his employ. I have referred above to the case of charitable gifts, as an instance in which there may be said to be an apparent conflict between ethics and economy. In this case the economist points out that the result of indiscriminate almsgiving is to sap self-reliance, to reward the idle, and in the end to increase poverty. It is for moral science to say whether these results outweigh the indulgence of a kindly feeling and the relief of an immediate want.

To come to the problems which are at present stirring society. Ethical science teaches the old moral of Dives and Lazarus—that the goods of this world are unequally divided, and that it should be our aim to procure for the poor a larger share of them. Economics teach, or ought to teach us, whether the present arrangements are calculated to effect this object; whether any given change in them will promote it more effectually; or whether any such change may, by checking enterprise, make the aggregate production smaller than it is, and thus diminish the consumption both of rich and poor. Morality will be in favour of a living wage, if by that we mean sufficient to enable the workman to live in decency and comfort; but if economical science proves that such a wage cannot be earned without destroying the trade which pays it, morality will find it out of her power to give such a wage, unless she can perform the miracle of the loaves and fishes. The moralist very properly condemns sweating; but if the economist proves to him that no one is earning excessive profits, and that with higher wages the business will cease, the moralist will be driven to choose between the terrible but unavoidable alternatives of sweating and of starvation. Ethics is of the heavens, heavenly; and political economy has been termed the Dismal Science. But there is another side to the picture. The divine discontent of ethics with human misery may, if unchastened by accurate thought and unrestrained by fear of consequences, degenerate into despair, producing, not only general bankruptcy, but cataclysms such as the Peasants' Revolt or the French Revolution. And on the other hand it may, perhaps, be possible for political economy to show

that, underlying the surface of human inequality and of too frequent want, there are laws silently operating which are constantly increasing the aggregate product of human industry, and giving a larger and ever larger proportion of those increased products to the humblest workers.

Ethics appeal to the highest part of man's nature, to his conscience, his emotions, his affections; and if they seek the aid of the intellect they do so for the purpose of harmonising the action of these motive powers and giving them their fullest effect. The business of Economic Science is purely intellectual; it draws general conclusions from given premises, and teaches what will be the probable result on wealth of any given set of external conditions or of any particular course of human action. In one sense Economic Science is the handmaid of Morals and of Politics, for it helps them to the means by which their ends may be attained. In another sense it limits their scope of action, by showing that the ends which they seek to attain cannot be attained at all, or cannot be attained except under certain conditions. It gives, if and so far as it can be trusted, to the statesman, the philanthropist, or the reformer the same sort of help which the knowledge of navigation does to the mariner.

But, alas! the help and guidance given by Economic Science to the politician have hitherto proved far less trustworthy than those given by physical science to the navigator. Its chart and its compass have often been found at fault, and its so-called laws have too often proved to be not only obscure but absolutely erroneous. It has too often claimed for its conclusions the authority of an universal law, where subsequent experience has proved the supposed law to be not only partial and inadequate, but false; and not only false, but mischievous. Few people will be found now to maintain in their integrity the theories of rent, of value, of wages, of population, and of prices which at one time prevailed. Even the principle of Freedom of Contract has been carried too far, and applied, as an absolute dogma, to cases where no freedom exists; the consequence of which is that at the present moment there is a sentimental and unhealthy reaction against this wholesome and invigorating doctrine. These changes in opinion and the reasons for them have been so often and so well stated that I should not now recur to them if they did not illustrate a point on which I wish to insist to-night, viz., the connection between economical philosophy and the business of this Society. From this point of view it is instructive to consider how it has happened that the theories I have referred to have ceased to command our assent.

The theory of rent has no doubt an element of truth in it.

Land is limited in quantity, and the land which is most in demand commands the largest—sometimes an extremely large—rent, as we still see in our towns. But a formula which seeks to express rent generally in the terms of the comparative fertility of different soils, without regard to habit, situation, transport, use for other purposes, and a variety of other circumstances, leads to conclusions which are so much at variance with actual facts as to make the formula useless for practical purposes. Consequently it has been laid aside, and the facts and circumstances which have led to this result are such facts as it is the business of statistical science to provide.

The theory of value which makes all value depend on labour or cost of production has also no doubt an element of truth. There are certain things the value of which does tend towards and oscillate round the cost of production and the labour employed on them. But there are many other things the value of which has nothing to do with labour or cost of production, and these cases lead to the conclusion that the relation which we call value depends simply on supply and demand, or, in other words, that the value of a thing is what we can get for it. The old theory has consequently been discredited—not without doing much mischief; and the means by which it has been discredited are again facts such as it is the business of statistical science to furnish.

The theory of wages again—the iron law of the socialists—the theory according to which the wages of labour must be forced down to the lowest margin of subsistence, whilst the surplus profit must go to the rent owner and the capitalist, a theory which has done as much mischief as any false doctrine by which men have ever been perplexed and tormented—has been disproved, not so much by *à priori* considerations concerning the nature of labour and its difference from other commodities, as by the actual statistics of wages, which, imperfect as they still are, show that with improvements in production and transport the demand for skilled labour increases, that the general standard of living rises, and that both in real and nominal wages labour, unskilled as well as skilled, gets a proportionately increased share of an increased product.

Take again Malthus's celebrated theory of population. That theory was founded on statistical evidence which, we are informed, was as good and as accurate a representation of the then known existing facts as it was at the time possible to procure. The theory has still an element of truth in it, as we may see in the condition of some of our crowded cities, in Ireland, and, as some competent judges tell us, of India; and, if other things had remained as they were when Malthus wrote, it is probable that

his views would still have had a general or universal application. Even now we cannot say that it may not prove true in the future. But so far as the greater part of the civilised world is concerned, not only has population not increased faster than food, but the reverse is the case, and the complaint now is that the supply of food, at any rate of wheat, is in excess of the demand. The mistake here lies, not in founding a theory on a supposed tendency of human nature, but in an insufficient induction—in supposing that a generalisation founded on the facts of one period would be good for all periods. The lesson to be learnt from it, so far as statistics are concerned, is that it is not safe to base a permanent conclusion on the facts of any one place or time collected once for all; but that observation of facts, to be permanently useful, must be continuous, and that the conclusions to be drawn from such observations must be open to question and revision as the facts alter. There is no finality in statistics any more than in any other branch of knowledge.

The quantitative theory of money and prices furnishes another illustration. There is a notion still, I am sorry to say, prevalent in many quarters, that since coined money is the nominal medium of exchange, and is actually in some cases given in exchange, therefore prices of all articles depend on the quantity of coined money available for the purpose. This theory may have had some foundation in fact at a time, if ever there was such a time, when coined money was actually used and given in exchange on every sale and purchase. It has long ceased to be generally true, and has become absolutely false and mischievous at the present time, when the great bulk of sales and purchases are carried on without any coin at all, and when the trade of a country may be doubled without the need for an additional sovereign. The real weapon with which to defeat this fallacy is to be found in the facts of modern business and in the statistics of trade, of banking, of credit operations, of gold reserves, and of the rate of discount.²

The examination of these cases leads to the conclusion that the greatest mistakes which economists have made might have been avoided, if they had relied less on *à priori* reasoning, and had paid greater attention to the facts of human society which it is the business of Statistical Science to furnish. It leads to the further conclusion that as human society is a living and changing

² To those who wish to understand this subject I would strongly recommend the works of H. D. Macleod on Credit and Banking, which do not seem to me to have received the attention they deserve from English Economists. I mention them the rather in this place, because, though to my mind far too dogmatic and absolute in form, they contain in substance a much more complete and accurate analysis of the actual operations of men of business than I find in ordinary works of Political Economy.

organism, and not a dead stereotyped crystal, these facts must be continually observed, collected and compared, and that the conclusions of an earlier experience must be modified to suit the ever-changing circumstances of the world.

In physics experiment is the test of truth. No hypothesis, however brilliant and probable, is allowed to rank as more than an hypothesis until it has been verified by experiment—indeed we may say that without patient and repeated experiment no advance in physical science is possible. In the case of economical science we cannot perform experiments as we can in the laboratory; but we can observe the experiments which society is making, and we can generalise from the results. These results are for the most part recorded in statistics; and we may therefore look upon accurate and properly selected statistics as the experimental test of economical hypothesis. Unless a generalisation has been founded on an adequate record of facts, and unless it will bear the test of comparison with facts, as recorded in statistics, it has no right to claim the title of a scientific truth.

But there is another side to the question. If economic hypothesis is incomplete without statistics, statistics are meaningless without an hypothesis. There is no use in collecting facts at random. Unless we can draw some general inference from them, masses of figures are useless, and in order to collect them properly we ought to know what sort of inferences we expect to draw. If we are to interrogate the facts of human society successfully, we must know how to put the question. How often—when anxious to test some assumption or generalisation by recorded facts—have we not all of us been disgusted by finding a mass of figures so collected as to be incapable of comparison with one another; so ill-digested as to bring out no result; or so ill-selected as to miss the very point we wished to ascertain! If therefore economic science must be incomplete without statistics, statistics are unmeaning and useless unless selected and digested by economical science. In fact, statistics do not really constitute a separate science; Statistics of National Wealth and Political Economy are not two different sciences, but different parts of one science, and neither of them can exist to any useful purpose without the other.

I have spoken above of Economical Science because many, probably most, of our statistics relate to subjects which specially concern that science. But what is true of the relations between Statistics and Economical Science is also true of the relations between Statistics and other sciences, such as the science of health, of jurisprudence, &c. My point is that statistics ought not to be regarded as a separate branch of knowledge, but as part of the science of the subject to which they relate.

I admit, of course, that there may be methods and forms of stating and digesting facts and figures which are common to the statistics of different subjects; and we may if we please give to a knowledge of these methods and forms the name of Statistical Science. But I venture to think that human nature would soon revolt against a meal composed of such dry bones; and that they would form a poor foundation for any journal or for any society. As a matter of fact the ordinary publications of this Society and of statisticians in general are not those which discuss the mechanism of their figures, but those which array the figures so as to bring out results.

The functions of such a Society as this are therefore to find materials for political economy and other kindred sciences. Their scope is in one sense enlarged, and in another restricted by the fact that those classes of statistics which experience has shown to be most important and most permanent, are, and must be collected by government departments. Such statistics are too vast to be collected by any private agency, and the government departments in the course of their ordinary business have means of collecting them which no private person or society possesses. But the statistical work done by the government, extended as it has been of late years, and further extended as it must be in the future, leaves and always will leave much to be done both by individuals and by societies such as this. There is for instance the function of criticising government work, and of making suggestions for its improvement. The danger in government work is that it may become sleepy, and that it may degenerate into routine. To stir up the government departments; to find fault with defective methods; to suggest additions and alterations which changed circumstances may require, is a duty which I believe this Society has discharged in the past, and which, as an old official, I trust they will discharge still more vigorously in the future. As an instance of such criticism I may mention the recent paper by your Assistant Secretary on the mode of taking the census.

But besides this function, there are others which can rarely if ever be discharged by government departments, and which must be left to individual research, fostered perhaps or directed by such an organisation as this Society. There are investigations which, from their novelty, or from their comparative uncertainty, must in the first instance at any rate be undertaken by private observers, who have convinced themselves of their importance, and who, either from a scientific love of truth, or from a desire to advance the interests of society, are willing to bestow time and labour in bringing them into public notice.

The first illustration which will occur to us all is the monu-

mental inquiry conducted by your late President concerning the condition of the poor of London, an inquiry which has the remarkable peculiarity that it appears to have been undertaken from a pure scientific and philanthropic interest in the subject. Other cases will occur to us all, amongst which I may mention Tooke's great history of prices, the price lists and index numbers of the "Economist" and of Mr. Sauerbeck, and, finally, but not least, Soetbeer's well known "Materials."³ I select these for mention not because there may not be other works of the kind of equal value, but because they happen to have come under my own recent observation. I mention them also for another reason, viz., because they illustrate a point on which I have insisted already, and to which I shall recur again, viz., that in order to make any useful statistical inquiry you must put a definite question. You must have some special point you are anxious to elucidate; or you must have some hypothesis or some conflicting hypotheses which you are anxious to test, to verify, or to disprove, not, of course, with a predetermination to get a particular answer, but with a clear prevision of the possible alternative answers. Tooke wished to ascertain to what extent currency had affected prices, and Sauerbeck and Soetbeer probably had the practical gold and silver question in view when they undertook their laborious investigations. Without a distinct intellectual objective no valuable truth can be attained.

Again, there is another class of discussion which is eminently inappropriate to a public department and appropriate to such a Society as this, discussions, viz., of the meaning and bearing of the facts supplied by statistics on the condition of the people, and on the practical action which it may be desirable to take or abstain from taking in consequence. Discussions of this kind approach closely to the ordinary topics of politics, and are apt to assume a party character. They are therefore in general very properly eschewed by the permanent civil service of the Crown. But they are of first rate importance, and deserve all the aid such an institution as this can give. Let me mention as illustrations two papers, both of them originally read before this Society. The one is Mr. Newmarch's address to the Statistical Society contained in the *Journal* of June, 1878. In that address Mr. Newmarch examined exhaustively the trade statistics of the United Kingdom for a period of thirty years; he showed how, under a system of free imports, the productive power of the country had increased in spite of hostile tariffs and increasing foreign competition; he

³ *Materials for the Illustration and Criticism of the Economic Relations of the Precious Metals, and of the Currency Question.* By Ad. Soetbeer. Translated in Appendix XVI to the Report of the Gold and Silver Commission.

answered the different objections to that system, and established, to the satisfaction of all reasonable men, that the policy which had been adopted by this country under the guidance of Sir R. Peel and his followers had been a practical success, and had answered the expectations of the philosophers and statesmen who advocated it.

My second illustration is the paper by Mr. Giffen on the "Use of Import and Export Statistics," read before the Statistical Society on 21st March, 1882, and contained in the *Journal* for June, 1882. It is re-published in the second volume of Mr. Giffen's "Essays on Finance," p. 132. At the time it was written alarm had been expressed, even by some intelligent free traders, about the excess of our imports over our exports, and it was apprehended that by the recall of our foreign investments we might be reducing and eating up our capital. Mr. Giffen, by a careful examination of statistics from different sources, and therefore confirming one another, disposed for ever of this chimera, and at the same time gave most valuable lessons as to the mode of using trade statistics.

A third investigation of the same kind may be found in some papers by the late Dr. Erwin Nasse, of Bonn, on the fall in the price of commodities during the fifteen years preceding 1888, and on the Report of the Gold and Silver Commission.⁴ In these papers he proved by a careful examination of the existing statistics and of the facts of contemporary history, that there were ample causes for the fall in prices of which we have heard so much, without any reference to currency or to the supposed scarcity of gold, a conclusion which at the present moment is one of great practical importance.

It is obvious that inquiries such as these cannot be conducted by a government office. It is, I think, no less obvious that they owe a great part of their value to the fact that both Mr. Newmarch and Mr. Giffen had very decided views on the subject of free trade, and that Dr. Nasse held equally strong views in favour of a gold standard, and that all of them, whilst using statistical figures with perfect fairness, had very distinct notions of the case they desired to prove. In other words, the scientific inquirer held in each case an hypothesis, or rather an opinion, which he was anxious to verify, and which he did verify by an appeal to the experimental evidence supplied by statistics.

The above are examples of useful investigation selected from the province of economics. How many more cases are there not even in the same province which would amply repay similar

⁴ They have, I fear, not been translated; but the originals will be found in Fischer's *Jahrbücher für National Oekonomie und Statistik*, Jena, 1888-89.

inquiry? I will mention three, because they have recently come under my own notice.

The first is the question of the gold and silver standards and of a metallic currency. How much have we not yet to learn! Notwithstanding all the labours of Soetbeer we are still in the dark about many important facts, and we are at loggerheads about conclusions. We do not know how much gold or silver there is in the world; what are the demands on it; what quantity of it is in use in currencies; how much is hoarded, and where, and for what purposes; or how much is used in the arts or for ornament. As to prices, we know the prices of a few wholesale commodities in the open markets of the world, and we have some imperfect statistics as to the price of labour. But there are whole regions of price of which we know nothing; and as to the relation of gold and silver to prices, or of money to prices, we not only know nothing accurately, but we are at variance as to the principles on which those relations should be investigated.

Take again the question, which is becoming more and more important every day, whether industrial enterprises can be better, more cheaply, and more efficiently conducted by private enterprise or by governments. We want to know what, if any, are the industrial enterprises which can be best undertaken by governments, local or municipal, acting solely in the public interest, and paying their extra expenditure out of taxes? and what are the industrial enterprises which can be best undertaken by private undertakers working in the expectation of profit? These are questions which open an immense field for statistical investigation. How much should we be advanced in practical statesmanship if we had accurate comparisons of the cost and efficiency of gas and water supply in the various towns of this and other countries which have adopted different methods; comparisons of the cost and efficiency of railways in this country and in America with those of railways in Germany, in Australia, and in other countries where they are more or less in the hands of governments; comparisons of the wages and work in government departments with those in private yards and factories, and other comparisons of the same kind? The magnitude and difficulty of such inquiries is only equalled by their importance, but they will have to be made if we are to have any foundation more certain than the *à priori* arguments with which individualists and collectivists now carry on the discussion.

Take again the numerous questions concerning the relief of the Poor which are now agitating society. How much have we not to learn in the shape of actual facts: of facts relating to Out-door relief, and its effects on Pauperism and on Wages; facts

relating to the Relief of the Aged as distinguished from the Able bodied; facts relating to Insurance against Accident and Illness in different countries; and other matters of the kind?

These are only some of the numerous questions awaiting solution in the region of pure economics; and if we were to add the other branches of knowledge which are needed for the aid of practical politics—health, education, crime, &c.—the list of subjects needing statistical investigation would be endless. Much as is being done by the State, the ultimate scope of statistics is as wide as human action, and will only find its limit in that infinitely distant vanishing point at which that ambitious upstart, Social Science, has attained completion. Indeed, my difference with Sociologists is one of name and of method rather than of ultimate scope. I dread a phrase which implies an edifice where we are only digging foundations, a phrase which is only too likely to encourage the deductive and absolute conclusions from which economic science has suffered so much already. Perhaps this is a senile apprehension; but the longer my experience the more deeply do I feel the truth of the saying of the great German: “In youth we dream of building palaces for men. In age we think ourselves happy if we have removed from the ground a little of the rubbish which others have laid upon it.” Let us do our best to remove the rubbish carefully, and to see that what we do build has a foundation in experience.

It may be said that I am demanding more from Political Economy and from Statistics than human capacity is able to furnish; and this charge would be just if I were addressing a popular audience. No one is more alive than I am to the difficulty of making Statistics accurate, or to the innumerable dangers which beset the use of such facts and figures as we possess. But these are precisely the difficulties and dangers which it is the business of your Society to encounter and obviate. Nor is it to be supposed for a moment that human action, political or otherwise, is to be suspended until we have a complete and perfect science of political economy. We might as well refuse to call in a doctor, because the science of physiology is very far indeed from being complete. In this, as in all other spheres of human action, we must live and act by such lights as we have, imperfect as they may be. But in this room I am addressing a Society of experts, whose business it is not to act, but to advance knowledge; and in addressing them I cannot be wrong in pointing out the danger of assuming hypothesis to be knowledge, and the necessity of long and patient investigation if we wish to attain positive and valuable truth.

Allow me to recapitulate the results of what I have said,

results for which the only claim I make is that they are in accordance with the principles by which other branches of human knowledge and learning have found true advancement.

From Ethics or Morals we learn what ends to aim at, and in what spirit to strive for them. But Ethics need the guide of accurate knowledge in order to judge what means will be effectual in attaining these ends. Economic Science is one branch of such knowledge, and like other sciences proceeds by hypothesis and experiment—hypothesis derived from analogy, from past experience, or from the known qualities of human nature; experiment, consisting of observation of facts, the most important form of which are statistics. If this be a sound analysis, economic science can never conflict with morals, since they are on a different plane; and statistics ought not to be divorced from economical hypothesis, since they form part of one science.

I will end by touching on a point on which I speak with much hesitation. A new society has been recently started, called the British Economic Association, and a new journal, called the "Economic Journal." Is there room for this new Association and for the "Economic Journal," apart from this Society and its Journal? Might they not, according to the suggestions I have made in this paper, advantageously form one body? Ought not those who propose the questions be the same persons who collect and digest the experiments? Ought statistics to be separated from economic science? Is it not possible that if the two Societies or the two journals were brought together, that the plan of their operations might be more philosophical and their united labours more successful in attracting public favour than they are now? In raising such a point I feel that I may be treading on dangerous ground. The suggestion is entirely my own, and arises simply out of the considerations I have laid before you. I feel that my knowledge of your business is insufficient to justify me in forming a definite opinion; and if in throwing out the hint I am exceeding the proper limits of a Presidential Address, I can only appeal to your lenient judgments. Indeed, if I may be allowed an egotistic word before sitting down, it is to say that if it had not been for the pressure of kind friends I should never have undertaken to inflict this paper upon you, and that in writing it I have, I fear, only added a few leaves to the pile of economic speculation for which I have in truth little taste and still less capacity.

PROCEEDINGS *on the 20th* NOVEMBER, 1894.

AFTER the preliminary formal business of the meeting,

The PRESIDENT said his first duty was the extremely agreeable one of handing to Dr. Giffen the gold Guy Medal which had been awarded to him by the Council in recognition of his long and exceptional services to statistical science. Having been associated with Dr. Giffen for many years at the Board of Trade, he thoroughly appreciated his merits. Dr. Giffen's reputation both in this country and throughout the civilised world was so great that any praise of his would be entirely superfluous. They all knew what he had done for statistical science, and he would therefore without any further remarks at once present him with the medal.

Dr. R. GIFFEN, in acknowledgment, said that he had to thank the President and the Society very cordially for the honour which they had been pleased to confer upon him. It was an additional gratification to him that the President of the Society, who was the medium of presenting the medal, should also be the chief with whom he had been so long associated at the Board of Trade. It was to some extent his connection with the Statistical Department of the Board of Trade which had directed so much of his attention to the subject. It was now eighteen years since he had received that appointment, and but for it he was very doubtful if he should have been able to devote his mind as he had done to the study of statistics, and the principles and practice of statistical methods.

The President then delivered his Inaugural Address.

Mr. CHARLES BOOTH said it was his pleasing duty to move a cordial vote of thanks to the President for the address he had just read, which had been to all of them most interesting and suggestive. That which he felt most strongly about was its frank courage, its determination to go to the root of things, and to put the possible work of the Society clearly before the members. The division which the President had traced between ethics and economics, placing them on different planes, he should certainly entirely agree with. The peculiar position of statistics was that it stood between the two, and could hold a hand to either, and it did in fact hold out its support and criticism to both. In that way, whether they combined or did not combine with the British Economic Association, they must certainly work hand in hand with it; whether there should be one journal or two, they must attack the same subjects, attack them from two points of view,

but with a common aim. He begged to move a cordial vote of thanks to Lord Farrer for his address.

Sir RAWSON W. RAWSON said he esteemed it a high privilege to have the opportunity of seconding this motion, which had probably been accorded to him as the oldest member of the Society present, and as having commenced life in that department of the Government in which Lord Farrer had risen to such high eminence. He thought this address could not fail to have an important influence upon the thinkers of the Society. Nothing was more striking than the observation in the paper, that what held good fifty years ago, founded on the scanty information and imperfect consideration given to these subjects at that time, might not hold good now. Daily observation proved that. He also hoped that the influence of ethics upon economics might result in dispelling the erroneous view entertained by the mass of the people with regard to the relations between the rich and the poor, the moneyed and the moneyless, and that it would put an end to, or at all events check, some views which had arisen in a very recent period, and attained a considerable strength during that short period. With regard to the last paragraph of Lord Farrer's address, he himself held that it might be desirable to keep the two societies separate, more particularly taking into consideration another paragraph in which Lord Farrer said: "You must have some special points you are anxious to elucidate in collecting statistics, or you must have some hypothesis, or some conflicting hypotheses, which you are anxious to test" (in the collection of statistics). He quite admitted that to make statistics of value and of interest there must be some point of view from which they should be arranged and treated, with the view of illustrating some hypothesis or leading to some conclusion. But in collecting them there is always danger of aiming at the confirmation of preconceived views. Whatever opinion might be entertained on this point, the Society could not sufficiently thank Lord Farrer for the trouble he had taken in preparing this valuable address and in coming there to deliver it.

The motion was then put and carried by acclamation.

The PRESIDENT acknowledged the vote of thanks, and the proceedings terminated.

ADDRESS to the ECONOMIC SCIENCE and STATISTICS SECTION of the
BRITISH ASSOCIATION, held at OXFORD, 1894. By PROFESSOR C.
F. BASTABLE, M.A., LL.D., *President of the Section.*

THE long period that has elapsed since the British Association last met in Oxford, covering as it does the life of an entire generation remarkable for activity in all departments of scientific work, would of itself suggest at least a passing notice of the changes that have taken place, and the progress realised in the subjects assigned to this section.

But some special reasons combine to give increased interest to a comparison between the position of economic science in 1860 and at the present day. What is usually known as orthodox political economy had taken its final shape and reached its highest point of practical influence just at the time when Nassau W. Senior, one of its most typical expositors, was chosen to preside over Section F at its last meeting here. Far better even than J. S. Mill, Senior represented the strong and weak points of the English school. Clearness of thought, a firm grasp of elementary principles, and complete freedom from the disturbing influence of sentiment are distinguishing marks of the compact treatise in which he set forth the chief doctrines of economics, and they are equally shown in his presidential address. Political economy, he maintains, is a science and nothing else, limited in its scope to the subject of wealth, and concerned rather with mental than with physical phenomena. This very precision and rigid limitation naturally tended to produce some of the less admirable characteristics of the normal "political economist." Undue insistence on the omnipotence of purely material motives, a somewhat cynical disregard of the moral forces that influence human action in respect to wealth, and a certain love of paradox, especially in cases where popular prejudice was concerned, may be traced in Senior's writings as in those of most of his contemporaries, and go far to account for the intense repugnance felt by moralists and social reformers for a system which confined itself to one, and that which they deemed the lowest and coarsest side of human life.

Such as it was, however, with, and in part by reason of, its definiteness and its narrowness, political economy commanded the respect of a large section of the public and of its instructors and guides in the press, who looked on it as supplying a rational code of industrial and commercial conduct. "The recognised principles

“of political economy,” or “the immutable laws of supply and demand,” were phrases that occurred as readily to a journalist in the sixties as “the exploded doctrine of *laissez faire*” does to the leader-writer of to-day. The scientific doctrine of the economist applied to practice became the guiding rule of the practical man of business. Its influence on legislation is strikingly shown by two important triumphs gained in this very year (1860). The first and most enduring was the full and complete establishment of free trade as the basis of the fiscal policy of the United Kingdom by the budget measures of the year; the second, though transient, is even more instructive for our present purpose—viz., the declaration, in Cardwell’s Irish Land Act, that for the future tenancies should rest “on contract and not on tenure,” so that the relation between letters and hirers of land was reduced to a purely commercial one subject to the law of the market, and released, so far as legislation could secure that result, from all influence of sentiment or custom.

In such a condition of apparent prosperity, it was hardly likely that any apprehensions should be felt as to the future of economic study, and accordingly no signs of misgiving are to be found in Senior’s brief but emphatic statements. His sole complaint is directed against the unfortunate tendency on the part of contributors of papers to wander from the region of science into that of art or practice, to the neglect of their proper subject, which afforded a sufficiently ample field for fruitful inquiries.

I need not say that this attitude of calm and assured confidence did not long continue, and it is equally unnecessary to attempt any description of the series of revolts against both the strict theoretical doctrines and some of the practical conclusions of the classical economy. Abundant information as to the leading phases of the movement and the chief actors therein is supplied in works so well known that any summary of their contents could be only the merest commonplace.¹ As affording a starting point for further discussion, I may, however, remark that three causes have most effectively operated in bringing about the changed position of our science—viz. (1) The influence of foreign, and chiefly German, workers in the same field; (2) the profound though peaceful political revolution by which power has been transferred to the working classes; and (3) the growth of the doctrine of evolution, which has been perhaps more potent in its effects on the social than even on the biological sciences.

¹ Dr. Ingram’s “History of Political Economy” 1888, pp. 221—235, and Professor Foxwell’s letter on The Economic Movement in England, “Quarterly Journal of Economics,” October, 1887 (vol. ii, pp. 84—103), may be particularly referred to.

As regards the first point there is no room for doubt or question. With the exception of Say and Bastiat—who were chiefly valued as popularisers of English opinions—no foreign economist was at all known in England before the last thirty years. The mere suggestion that we had anything to learn from Germany, Holland, or Italy would have appeared ludicrous to Senior or McCulloch, or, indeed, to the educated public.² The true position of the foreigner was that of the humble disciple accepting gladly orthodox English teaching. This insularity of tone undoubtedly retarded progress in all departments of economics, but its evil effect was greatest in preventing any thorough consideration of the social and political groundwork on which all systems of economy rest, and to which all economic theories must, if they are to be enduring, pay adequate attention. The great and saving merit of German economic investigation lies in its unreserved acceptance of this fundamental fact, and it was in this very point that our English predecessors most signally failed. We should have escaped much narrowness and onesidedness of view if our writers had sought to understand and appreciate the continental conception of the political sciences as an organised group of studies. Nor is it quite clear that this just ground of complaint has been altogether removed. Admirable efforts have been made by Leslie and others to diffuse a general knowledge of the labours of the historical school, and our principal text-books no longer pass over in silence the weighty contributions of foreign writers to special points of doctrine. Among professed students and teachers of economics there is a considerable and growing acquaintance with the products of foreign thought. Yet it seems as if the best lesson that they convey has not been thoroughly laid to heart, and that most of our attention has been directed to one particular school which makes the nearest approach to English methods, and is therefore least likely to help in correcting our peculiar failings. Is it not somewhat curious—might I not say discreditable—that the works of the eminent Roscher, whose loss every student of economic and political science must deplore, have found no British translator or even effective imitator?³ Other instances nearly as glaring might be mentioned, leading to the general result that the distinctive differences in the English mode of treating economics are not sufficiently recognised, and further progress is for the time hindered.

² "Political Economy," said Professor Huxley in 1868, "is an intensely "Anglican science."—"Lay Sermons," p. 48.

³ "The Grundlagen," the least characteristic and original of Roscher's works, has been translated *in America*, but the other volumes of his "System" and his remaining writings are inaccessible to the English student.

Increased political power obtained by the class of manual workers has most markedly altered the prevalent tone of thought on industrial questions, and, if it has not caused, has at all events coincided with the adoption of more tolerant views respecting the effect of labour combinations. Fuller analysis has shown that the consequences of economic action are far more complex and more affected by surrounding conditions than upholders of the orthodox doctrines were willing to admit; but this modification in theory has been guided by the urgent pressure of non-expert opinion. It needed a very hard struggle to secure due recognition of the elements of truth in the trade union position as to the determination of wages. But the mere substitution of "working class" for "middle class" dogma would not indicate any scientific advance. It is rather in the evidence of the close connection of economic facts with other forms of social activity that the true importance of the change consists. It is henceforth clear that no interpretation of industrial or other economic phenomena can claim to be adequate unless it takes into account the particular forms of social structure and the special political conditions which have helped to produce them.

More profound and far-reaching, both in its actual effects and in its still greater promise for the future, was the appearance of the principle of evolution that became an active force from 1859. Its immediate influence in one branch of social study is well shown in the reception given to Maine's "Ancient Law;" and though the economists did not at once recognise the full import of the method in respect to their own department of work, they saw its value in some special points, and thereby gave an opening for its further and more extensive employment.⁴ The most obvious of the services that the new conception rendered was in bringing out the general similarity of the various sciences dealing with man, which again made examination of the bonds joining economics to the related subjects a more prominent object. Just as in biology the older inelastic views as to the nature of species and types gave way before the idea of innumerable gradations and transitional forms, so rigidity of definition and isolation of the study of wealth became no longer possible. Economic problems were found to be in contact at many points with social and political ones, and even within the artificially limited field of economics maintenance of the sharp lines between "capital" and "non-capital," between "rent" and "interest," between "currency"

⁴ See J. S. Mill's "Principles," book ii, chap. ii, sec. 3n, and Cairnes's "Political Essays," p. 154, for recognition of Maine's services. But to the end neither seemed to understand the real bearing of the evolutionary mode of thought.

and "credit," presented difficulties in face of the complexities of real life.⁵

Thus the disposition to take a broader view of the subject, and to widen the general conceptions and the "setting" in which the received economic doctrines were presented, was encouraged by a series of influences operating in the same direction, and which, taken together, have left no inconsiderable mark on the actual condition of the science. The severest critic of the current political economy cannot, without unfairness, refuse to admit the improvement in tone, the greater thoroughness in the investigation of economic problems, and the wider range undertaken by the latest work of the English school. Much that was misleading or positively erroneous has been removed, and many valuable additions have been made to that part of the older system which has successfully stood the test of hostile examination. There is, besides, ample opportunity afforded for carrying on the work of reconstruction; indeed, it is chiefly because any suggestions, no matter how crude or imperfectly thought out, are likely to receive fair and candid consideration that I venture to notice some of the respects in which the revised and amended economic doctrine, as it appears to-day, seems to require further expansion and readjustment.

In the first place I cannot feel that there is any adequate expression of the ultimate dependence of economics on that larger subject of study which treats of society as a whole. It is no doubt true that our leading economists state very distinctly the great importance of a science of society could it only be brought into a healthful existence; but such general confessions lose most of their value when accompanied by a very pronounced scepticism as to the establishment in the present or near future of any set of doctrines worthy of the name of sociology.⁶ The very danger of this attitude lies in the fact that in one way it is so undeniably correct. When some of the more vehement assailants of the old political economy sought to contrast it to its disadvantage with a supposed social science into which it was to be absorbed, it was very natural to reply that political economy, however defective, was a fact, while sociology "was best described as an aspiration." There was no difficulty in showing that the so-called systems of sociology consisted of imperfectly collated facts and daring—often most unlucky—guesses as to the course of future events. The strict economist stood on very safe ground in contending against the

⁵ See Marshall's "Principles," Preface, pp. vi—x, on this point.

⁶ See Sidgwick, "Scope and Method of Political Economy," in *Statistical Society's Journal*, vol. xlviii, p. 612; Marshall, "Principles," book i, chap. v sec. 1; Nicholson, "Principles," pp. 11—14.

dogmatism of the "*Positive Polity*." But though the best attempts at a systematic treatment of social science have hitherto been grossly defective, this affords no excuse for neglecting a statement and analysis of the fundamental conceptions appropriate to social study and presupposed in all more special inquiries.

Political economy, like jurisprudence or political science proper, requires as its basis a fairly accurate comprehension of these preliminary parts of sociology. The questions—"what is a society?" "what are the conditions necessary for its existence?" "in what manner the chief social structures are produced"—and many others of the same class should, I believe, be discussed as an introduction to the narrower economic problems. Moreover, some topics that seem purely economic have really a far wider significance. "Division of labour," "supply and demand," and "the population question," must be regarded in a broader way than is possible within the limits that logical symmetry prescribes to the economist. In fact, the greater part of the matter to be found in the division of our text books devoted to the subject of "production" is only introduced to supply the want of a due preparatory study of the leading features of what I may for the moment call the "social organism." That expression has unfortunately some unsatisfactory implications. It seems to give support to the idea that the social and political sciences may be regarded as mere appendices to biology, and that by a liberal adoption of the technical terms of that science we can turn out a complete and definite system without the trouble of continued effort applied directly to the study of social phenomena. This belief seems to me to be hopelessly mistaken, and I would protest as strongly as anyone against the "manipulation of biological ideas and phrases"⁷ as a mode of dealing with either economic or social questions. But the general conceptions which are needed to realise the broad features of social structure are not the peculiar property of any single science. Division of labour, *e.g.*, was recognised as a social truth long before its importance for the vital sciences was appreciated. It is therefore quite possible, without any illegitimate borrowing or routine imitation of inappropriate methods of exposition, to provide a satisfactory groundwork of social doctrine on which our economic theories can be securely based. Such a change in the usual method of treatment would be in harmony with the development of economics during the last twenty years, and could be attained without any sacrifice of the valuable material stored up in the standard treatises. Nor is it merely at the outset that systematic reference to social structures

⁷ Nicholson, "*Principles*," p. 12.

and conditions is required; all through the course of investigation that the economist has to pursue he will find that fresh light is thrown on even the minutest details by continually keeping in mind, and striving as far as possible to realise the complete life of the society which exhibits them as one part of its varied activities. Great advances have already been made in this direction. No one can fail to perceive the contrast between the bareness of the manuals of Senior and Fawcett and—except in some particulars⁸—of J. S. Mill's "*Principles*," as compared with the more elaborate presentation of our best modern text books. Refined analysis of economic motives and critical discussion of abstract theoretical conceptions still hold a very large place; but the accurate exhibition of the growth of population and of the forms of industrial organisation, the tracing in their natural order of development of the "village community," the "feudal system," and of commercial land tenure,⁹ do much more to promote the effective progress of scientific economics than the most brilliant efforts at deduction from unduly simplified premises. I would specially insist on the fact that it is the social basis rather than the slighter edifice of half developed theory that gives life and power to our present work. We are thus led to the conclusion that one important step in the further progress of economics must be the fuller recognition of its dependence at the outset on, and its close relation all through its inquiries with, general social science, but that this reform does not need any extreme change in attitude—it rather involves the logical carrying out of an already pronounced tendency. No department or section of economics can escape this revision. Questions of value, money, credit, and foreign trade—to take topics that are supposed to be particularly amenable to abstract treatment—are more affected by social conditions than the theoretic economist will formally admit. Only through study of these influences can the materials needed for a correct theoretical solution be obtained, and due weight given to the several elements involved.

Another reform will be the natural, or rather necessary, consequence of that already urged. As soon as we get thoroughly

⁸ Mill's treatment of the earlier and ruder forms of land tenure is much more realistic and better "nourished with specific facts;" but this departure, as he deemed it, from scientific precision, was partly due to his strong interest in the Irish land question, and, as Whewell pointed out, is really an imitation of the method pursued by R. Jones in his admirable but premature book on "*Rent*" (1832).

⁹ For population see the treatment by Marshall, "*Principles*," book iv, chaps. iv and v; for industrial organisation, *ibid.*, chaps. viii—xii; for the village community and feudalism, Nicholson, "*Principles*," book ii, chaps. vi and vii; and compare with both the fuller treatment in the new edition of A. Wagner's "*Grundlagen der Volkswirtschaft*" (1892-93).

accustomed to contemplating economic conditions in their actual forms as the special products of social life, it is but a matter of course to notice the remarkable differences and equally remarkable resemblances that different instances of the same economic institution or function will present. The banking system—to take a familiar example—is not the same in England as in France, while in the United States a third variety, or set of varieties, is to be found. Even within the same country there is no absolute uniformity. London banking differs from country banking, and Scotch banking, again, is distinct from either. Differences in environment will supply a partial explanation. A new country does not require and could not maintain the more complex arrangements suited to an old centre of industry and commerce. But peculiarities of social structure and even historical accidents count for much. We must go to history to find the origin of the Bank of England and the system of which it is the foundation, and to some peculiarities of the American Constitution for an explanation of the failure of the two attempts to permanently establish a similar institution in that country.¹⁰ Now, what is true of banking is equally true of the monetary organisation, the economic features of the transport system—in a word, of every part of the economy of a nation or people. The attempts of different schools of economists to deal with this problem of variations must, I think, strike the unprejudiced observer as at best inadequate. Senior and McCulloch, representing very fairly the average economic opinion of their day, admitted the existence of diversities, but escaped their consideration by placing them outside the ring fence that bounded pure economics, or by regarding them as certain to disappear with the diffusion of sound views on the subject.¹¹ They in this way strove to keep up their favourite science as a real and positive one, while they shut out a number of troublesome questions. Mill and Cairnes boldly maintained that political economy merely dealt with tendencies, and was a hypothetical rather than a positive science; by throwing aside all the peculiarities, and confining attention to the points of agreement certain formally valid results could be reached. To directly apply them to practice or regard them as a complete interpretation of concrete phenomena was simply an error in logic for which, when committed by others, the economists could not be held accountable.¹² The English members of the historical school either neglect

¹⁰ See the several articles on Banking in the new "Dictionary of Political Economy;" also C. F. Ferraris, "*Scienza Bancaria*."

¹¹ Senior, "Introductory Lectures in the University of Oxford," 1852, Lecture IV.

¹² J. S. Mill, "Essays on some Unsettled Questions," Essay V; J. E. Cairnes, "Logical Method," Lecture II, sec. 3.

all but the crudest empirical classification, or suggest that each historical period must be treated by the use of special hypotheses suited to its particular condition, and thus succeed in combining their acceptance of a great deal of the traditional economic doctrine with a much more realistic treatment in respect to earlier times.

All these methods seem defective, though in very different degrees. If the political economy of the middle of this century is to be regarded as a positive science, applicable without restriction of time or place, we get a ready explanation of the charge of "undue absoluteness" so strongly urged by Knies,¹³ and, it must be allowed, with considerable justice. There was from this point of view but one correct system in respect to each economic element. Large farms, free bargaining between independent labourers and employers, the single standard, and a banking system rigidly conforming to that prescribed by the Act of 1844, were some of the features of a well-organised economic society, any aberrations from which should be rectified at the first convenient opportunity. So narrow a conception could not long stand the test of wider experience, and accordingly it made way for the treatment of the subject as based on a series of hypotheses. By skilfully limiting and qualifying the leading doctrines it was not difficult to avoid the more obvious contradictions, and explain away persistently obstinate facts by regarding them as "friction," or as "minor disturbing causes" which might be neglected without disadvantage. Used with reference to a given time and place, and with a wise selection of premises, the hypothetical deductive method yielded fruit of considerable value, but it utterly broke down in the attempt to deal with cases outside those included in the selected type, and even in dealing with them needed constant supplement and correction. Though the procedure of the economic historian appears specially devised to meet this defect, as it dwells on the differences found in the economic factors at different periods of a nation's history, it is far too narrow and too much complicated by the mass of details to render the service which is required. Economic history will, in conjunction with observation of existing conditions, ultimately furnish a rich store of materials out of which scientific results may be extracted, and this latter and most important part of the work will need systematic classification of the several types of institutions and conditions. To return to the example already given, it is necessary not merely to consider the abstract theory of banking under certain supposed conditions and its history in all countries so far as attainable. The principal object should be to ascertain the different groups

¹³ "Politische Oekonomie," 2nd edit., 1883, III, viii, pp. 401 *seq.*

into which banking systems can be scientifically arranged, and the ways in which each is produced by, and in turn reacts on the other parts of, the social system. Writers on sociology speak somewhat pretentiously of the “*consensus* of the social organism,” but they are expressing a real and important truth; for we cannot doubt that there are necessary relations, modifiable, indeed, within limits hard to define, but still present and not to be ignored by those who seek to interpret the movements of society. There is here an immense field as yet almost entirely overlooked. One minor instance may be noticed. We are all familiar with our own Treasury system, working smoothly and effectively through the agency of the Bank of England. We hardly realise that quite different arrangements are employed by the United States, and that France and Italy have a third system in force.¹⁴ The origin and actual working of these types of financial administration and their relation to the economic and commercial institutions of the several countries in which they exist present an interesting subject of inquiry, and this is but one trifling instance of what is to be abundantly found in nearly every part of the field of economics. Until such points are studied in detail and by the comparative method, we cannot expect to obtain a completed body of economic doctrine resting on careful generalisations gathered from a sufficiently extensive experience.

To the same defect is due the weakness in certain respects of our economic literature so far as monographs are concerned. Attention has often been called to the neglect of the problems connected with transport by English writers. We possess no recent works on the great subjects of (1) colonisation and (2) commercial crises that can bear comparison with the French and German studies.¹⁵ It would almost seem that the attention of the younger economists is too much fastened on the passing aspects of the labour and currency questions to allow time to be devoted to calmer theoretic investigation. Even from the point of view of immediate personal advantage this is decidedly a mistake. No better advice could perhaps be given to the serious economic student at the opening of his work than to steadily avoid “burning questions.” They are sure to be eagerly taken up by popular and untrained writers. Their scientific features are buried beneath a weight of prejudice and partisan feeling, and, last but not least, they so quickly become “burnt out,” and public attention turns away to some

¹⁴ Kinley, “The Independent Treasury,” deals with the United States system; and Alessio, “La Funzione del Tesoro,” attempts a comparison of the several methods.

¹⁵ Since Merivale’s “Colonisation” (1842, 2nd edit., 1861) no English economist has made any contribution like those of Roscher and Leroy-Beaulieu to that subject.

other and equally temporary subject of debate. Careful examination of a really important question for the moment a little in the background must in the end prove more serviceable when the force of events compels practical men to direct their attention to it, and to consult those who have given time and trouble to its elucidation.

A third point on which some reform is needed concerns the organisation and teaching of the subject more than the advancement of scientific research, though it would not be without good results for the latter. It is the relation of economics, not to the outlines of social science that are its necessary basis, but to the other divisions dealing with cognate and similarly special branches of social life. There has hitherto been an unfortunate disposition to separate economics too sharply from these kindred studies. When the reformer argues that political science, jurisprudence, and the scientific principles of administration should be grouped along with economics, he is met by the rejoinder that "we should do one thing at a time," that "division of labour" is imperatively needed in so extensive a field of work. To so contend is to quite forget that "division" implies "combination" of labour, and that mere subdivision of tasks is not of itself advantageous. The contention, besides, goes too far for its purpose. Within the special district assigned to economics there are very different subjects which have to be temporarily kept apart. Nothing would be gained by interpolating a discussion of the "wages question" into a treatise on "money," though no one would deny the connection that exists between these two parts of economics. In the same way politics—in the scientific sense—and jurisprudence gain when taken together with economics, and repay that advantage by the additional light which they afford. One of the errors fostered by the stricter economists in this country was the belief that in political economy there was a peculiar department differing totally from other social and political sciences both in the rigour of its logic and the certainty of its conclusions. Such types of precision as geometry and logic were regarded as the proper models in the pursuit of this "exact" science, whose cultivators were justly entitled to regard with condescension those engaged in seemingly less precise inquiries. The mistake committed was twofold. There was at once an over estimation of the solidity of economic doctrines and an undue depreciation of the results obtained in politics, jurisprudence, and social ethics, with, as a natural consequence, the severing of subjects that should have been combined to form joint parts of a comprehensive whole. Some excuse may of course be made. Political economy had really some advantages which enabled it to develop more rapidly;

it dealt with material interest when measurement was often possible, and its conclusions allowed of readier verification. It was, in fact, the first branch of social science that came under scientific treatment, and its earlier fruits were important enough to justify some pride on the part of those responsible for them. But this relative superiority seems to be steadily diminishing. Other, and for a time neglected, departments are freeing themselves from the confusion that surrounded their infancy, while the latest developments of economics tend to reduce the claim to peculiar rigour made in its behalf. But at any time the distinction was injurious. By presenting to the public a small and strictly enclosed section of social life as the sole part that admitted of scientific treatment, it weakened both what it exalted and what it debased. Economics became henceforth something that might be tacked on to any other subject or subjects as present convenience happened to dictate. Its true place and the various additions needed to give it consistency were altogether forgotten or ignored, until the study fell into serious discredit, from which it has only partially recovered. The true remedy is to be found in the combination of the several social sciences, together with the exclusion of everything that is extraneous. The extent to which this course will facilitate the progress of social studies may be in some degree conceived by considering the real unity of the field in which they work, and also the tastes and dispositions of those who make them a leading pursuit.

The economist, the jurist, and the political philosopher are in the main engaged in examining the same phenomena, but from different points of view. A particular system of land tenure, a peculiar organisation of classes, even currency or banking regulations, have to be studied on their juristic and political as well as their economic side. In each case there are special features which demand most attention, but it is well to be able to appreciate the other and, for the purpose, less important aspects. Nothing will bring this truth more forcibly home to us than the ease with which the limits can be passed. When we see that much of Sir H. Maine's writing is really economic, that J. S. Mill in parts of his "*Principles*" is dealing with juridical questions, we feel the closeness of the connection and the evil of separation.¹⁶

From this necessity of dealing with a common material arises the disposition on the part of economists to pass on to politics and jurisprudence. From the time of Adam Smith to the present day there has been no lack of distinguished examples. The two Mills,

¹⁶ See Maine, "*Village Communities*," Lecture VI, and "*Early Institutions*," Lectures V and VI; Mill, "*Principles*," book ii, chap. ii; book v, chaps. viii and ix.

Cairnes, Bagehot, Leslie, Hearn—to give but a few names—have made contributions to political and jural science little inferior to their services to economics. In our day have we not Professor Sidgwick's "Elements of Politics" as the natural and appropriate sequel to his "Principles of Political Economy?" So in Germany Roscher closed his academic career with a treatise on "Politics," which forms a worthy companion to his great economic *System*.

In the face of such impressive facts it is idle to maintain that economic science should be kept in isolation or joined at haphazard with other studies. The educational treatment of the matter is primarily one for the universities, but this Association can at least set a good example, and it is the better able to do this because it has always recognised statistics as an equal subject with "economic science," which in fact came in at a later time (1856). Now, as Senior allows, "the science of statistics is far wider as to its subject matter. It applies to all phenomena which can be counted and recorded."¹⁷ There is, he thinks, no limit to the objects to be included, provided that neither approval nor censure was expressed. Thus regarded, statistics is the handmaid of all the social sciences, and by releasing its votaries from this perpetual drudgery and allowing them to "thresh out" a little of what they have gathered, we may at once obtain a right constitution for this section as engaged in "statistical and social inquiry."

The reasons in favour of adopting an organisation of wider scope are strengthened by a reference to the actual position of economic science. After all the sustained attacks on it from different quarters it seems to have regained some of its lost ground, both as regards theory and practical influence. But this partial recovery can be sustained and completed only by adjustment to suit the external conditions, and must be of the nature I have sought to indicate, otherwise the revival can only be temporary.

Other countries are showing significant indications as to the true course of development. In the United States, where economics has taken so prominent a position, courses in social science are being established, and one university¹⁸ has gone so far as to create a chair of general sociology, in addition to the special ones assigned to different branches of economics and politics. Another instance is even more instructive. France has long been known as the home of economic "orthodoxy," which has the "Journal des Economistes" as its organ, and yet the last number of that eminently respectable and conservative journal opens with an excellent article on "The

¹⁷ "British Association Report," 1860, "Transactions," p. 183, or *Journal of the Statistical Society*, 1860, p. 359.

¹⁸ Columbia.

“State and Society” belonging altogether to the domain of political science.¹⁹ Further on in the same number there is a report of an interesting discussion at the Political Economic Society of Paris on “The Relation between Political Economy and Sociology,” where, though there were differences as to the exact nature of the relation, there were none as to its existence.²⁰ Similar indications are to be found in the movement of thought amongst economists in other European nations.

Practical considerations may also be put forward. It is highly desirable that certain professions—law, journalism, and public administration may be mentioned—should have economics as part of the training necessary for their exercise. To accomplish this object its combination with jurisprudence and political and administrative science in a common group seems by far the best way.²¹ The strictly professional students would obtain a better and more suitable training, and it might be reasonably expected that some with genuinely scientific tastes would be led to take up social science as a regular pursuit, and contribute to its progress.

But it is in dealing with the actual problems that present themselves in ever increasing number that this wider mode of treatment is most essential. To take first cases that are regarded as peculiarly within the domain of the economist—is it not true that commercial policy must largely depend on political and legal conditions? Even in carrying out the thoroughly wise and sound principle of free trade, the British Government finds itself involved in many curious complications. Treaties and administrative regulations have to be taken into account. The political forces that guide the tariff policy of nations have their decided effects, and whether we desire merely to estimate the actual character of any particular policy, to form a rational forecast of the course that nations will take in the future, or to give judicious advice as to what should be done, we cannot limit ourselves to abstract economic theory or even to economic considerations. And this is equally true of the currency question. The weightiest arguments for and against bimetallism are, I believe, political rather than economic, while such social influences as habit and custom powerfully affect the possibilities of action that purely deductive reasoning from economic premises might appear to suggest.

The case becomes stronger when we turn to more fundamental

¹⁹ *L'Etat et la Société*, by Maurice Block, “*Journal des Economistes*,” 15th June, 1894, pp. 321—343.

²⁰ *Ibid.*, pp. 420—431. The remarks of MM. Worms, Leroy-Beaulieu, and Levasseur are instructive as to the opinions current among French economists.

²¹ The rudiments of such a training existed in the case of the selected candidates for the Indian Civil Service, but the recent changes have practically removed this valuable part of the system previously in force.

and far-reaching problems. The essential character of the socialistic movement that is passing over western civilisation cannot be properly judged if we look on it as merely economic. The ordinary antithesis between socialism and individualism, or, as it is often conceived, between self sacrifice and selfishness, seems to me altogether misleading. The struggle is rather one between two distinct types of social organisation, one resting on the exaltation of the relatively modern institution of the State, the other deriving its principal force from the oldest and most enduring element of human society—the family. This aspect of the question will more and more come into prominence as the conflict proceeds. It is not the “man of nature,” the individual released from all restraints, who forms the unit in our modern “individualistic” societies, but the individual with family ties and sentiments, and profoundly influenced by other than purely self regarding motives. Collectivist socialism seeks to substitute for these natural agencies the comparatively artificial authority of the sovereign State. It aims at transforming private into public law, and it would make the life work of the citizen one round of public administrative duties. The origin of this special system is obviously due to a particular social condition; it is the natural product of the factory and the workmen’s club—*i.e.*, of a mode of living in which the family has unhappily sunk to a minor position, and in which the main uniting bond is that of “comradeship.” How impossible it would be to bring all human societies under a form of regulation that presupposes the close contact of large masses of men, and how hopeless it is to expect its effective working while the domestic organisation and family affections retain their power, is a lesson that the study of social science in all its branches will most effectually teach.

That the time is ripe for this fuller development is, I think, clear from the interest with which the most speculative works on social development are received.²² A daring and suggestive discussion of the problem of social evolution, even if its basis is highly questionable, is sure of applause and a wide circle of readers. The most pressing duty on the part of those who desire to promote true knowledge is to secure that there shall be the proper preliminary training on the part of the writers, and competent criticism of their productions.

Though I have dwelt mainly on the necessity for rearrangement and further progress, I should be sorry to leave the impression that I undervalue the great services of the English economists from Adam Smith to Senior and J. S. Mill. In its later develop-

²² Pearson’s “National Life and Character,” and Kidd’s “Social Evolution,” are the latest instances.

ments that school was open to criticism. Some of its members committed serious faults, but they also possessed very redeeming merits. They may perhaps—let us concede it—have been narrow minded; they may have been hard hearted, but in studying their chosen subject they were eminently “level headed.” They saw the working of material forces in their true balance, and were not unduly influenced by passing events. This intellectual sanity and just appreciation of the comparative weight to be assigned to the different elements operating on national life is well exemplified in an anecdote respecting Adam Smith himself, which we have on unexceptionable authority.

“Towards the close of the American war, when general despondency seemed to paralyse the nation, Dr. Smith, confident in the resources of the country, would not allow himself to despair of the commonwealth. On the news of Burgoyne’s surrender at Saratoga, Mr. Sinclair hurried to his friend with intelligence of the disaster, insisting that if affairs went on no better the nation must be ruined. ‘Be assured, my young friend,’ replied the imperturbable philosopher, ‘there is a great deal of ruin in a nation.’”²³

This attitude of calm, based on wide historical study and accurate estimate of the realities of things, is a valuable example which the older economists have left to their successors. At the present day, when we are always hearing of “the submerged tenth,” of depression in every branch of industry, of destructive monetary revolutions, and of land abandoned by its cultivators, while we seek to realise and trace the extent of these evils and to discover their causes, can we give a better reply to the eager enthusiast or the hasty innovator who insists that, unless his favourite nostrum is adopted, “the nation must be ruined,” than to answer, with the calmness that knowledge of the forces that are working for social welfare produces, “be assured there is a great deal of ruin in a nation?”

²³ Sinclair’s “Memoirs,” vol. i, p. 37.

*On the RELATION between WAGES and the NUMBERS EMPLOYED in
the COAL MINING INDUSTRY. By R. H. HOOKER, M.A.*

[Read before Section F of the British Association, Oxford, 1894.]

It is a generally accepted axiom that an increase of wages in any particular trade in a district will, provided other conditions remain as before, attract workers to that trade. The general course of events may perhaps be shortly stated as follows:—

When trade in any particular commodity begins to improve, there is consequently a greater demand for that commodity, the price of which begins to rise. In order to meet this increased demand, employers after a time find themselves under the necessity of increasing the number of their workpeople, and with this intent raise their rate of wages, as they can afford to do. Or, as happens almost invariably now in most skilled industries, the men, knowing that prices are enhanced, demand higher wages, which are usually granted, and this equally attracts outsiders, and production consequently increases. So far as the numbers of the employed are concerned it does not matter which method obtains—whether the master invites the new hands by offering higher wages, or whether they come in as a result of the higher wages granted to the older hands; there is an increase in either case. This phase may continue for three or four years, after which the demand for the commodity diminishes. In order to get rid of their stocks, which begin to accumulate at this stage, owners lower the price, and consequently the wages; at the same time they restrict the production, and the numbers in the trade decrease, until affairs are more prosperous again.

This is the theoretical case, but practically there are several alternatives, especially when the fluctuations in the demand for the commodity are not too great. With an increased demand the masters, instead of taking on more hands, will usually get their men to work overtime as far as possible (whether they pay for it or not), and it is only when all possibilities in this direction are exhausted that they take on extra men. With a slackening demand many more factors are called into play to avert a fall in wages and dismissal of some of the men. Usually difficulties arise, very often a strike; but in any event wages are kept up until the last possible moment, and to effect this various methods

may be tried. If wages are to be kept up, prices cannot be allowed to fall too low; and with this object short time is introduced or a certain limit to production (whether through the action of the masters or the men), &c. In some trades, when the fluctuations are not very pronounced, these devices, or a diminution of profit to the employer, enable wages to remain at the same level during considerable periods.

Practical illustrations of the direct influence of the wages on the numbers of the employed are not very numerous, and there are some desiderata which in most industries are absolutely wanting. The changes in wages are now-a-days fairly well recorded in several trades, and the records extend in many cases over a series of years. But the second necessary datum, namely, a statement of the numbers employed in an industry at sufficiently short intervals, is much less easily obtainable. There is a third essential feature, which is that the fluctuations, both in wages and numbers, should be comparatively violent, in order that other factors may be as far as possible eliminated. These three requirements are all sufficiently fulfilled in the coal mining industry, and the accompanying diagrams have accordingly been prepared as an attempt to ascertain how far a rise in wages is actually followed by a rise in numbers.

In the first of these diagrams the rates of wages have been taken from the Reports of the Labour Commission; they are from the evidence of Mr. L. Wood, and refer to the county of Durham. The upper line represents the wages paid to hewers, estimated in terms of the wage paid in 1871 and reduced to percentages (see Appendix, Table A). The lower line represents the numbers employed in the same area (the county of Durham), these numbers being taken from the Annual Reports of the Inspectors of Mines. They are the numbers given in that return as employed in mines under the Coal Mines Regulation Act, which include not only coal but ironstone and a few other unimportant minerals. These other minerals cannot however be considered to affect the figures, especially as no ironstone is raised in Durham county.

The similarity of the fluctuations in the two curves is very marked during the whole period, a rise in wages being invariably accompanied by a rise in the numbers, and a fall in wages by a fall or stationary condition in the numbers. But I may perhaps call attention to the magnitude of the variations in the numbers employed in this industry. They are much greater than might have been expected, and are so remarkable that they can hardly be ascribed to any other cause than the variations in pay with which they coincide. Between the years 1871 and 1874 the mining population in the county of Durham increased from

57,000 to 74,500, at the rate of over 30 per cent. in *three* years, which corresponds to a decennial rate of 140 per cent., or ten times that of the population of England and Wales. This enormous increase coincides with a rise of nearly 60 per cent. in wages in the twelve months ending February, 1873. Then came a decline, and in the three years 1876-79 the numbers fell off by $12\frac{1}{2}$ per cent. With the rapid advance in 1888-91 we have another very marked rise in the mining population.

Here I would point out that these movements are not confined to Durham, but are similar throughout the country. For instance, the whole number in the coal-mining industry in Great Britain increased by 34 per cent. during the years 1871-74, and fell off again in 1875-78. I have seen other charts of fluctuations of wages in Lancashire, the Midlands, and South Wales, and the curves of wages in these districts show the same undulations as those now exhibited, though the maxima and minima are more or less pronounced in different cases. The similarity between all these charts is very striking. Diagram II refers to South Wales; the rise and fall of the wages since 1879 are almost identical with those in Durham. The correspondence between the wages and the numbers does not appear to be so well-marked as in the first diagram, but this is to be explained by the much more rapid development of the coal-mining industry in South Wales. The numbers in the South Wales district were 50,000 in 1880, and 88,000 in 1892, an increase of 75 per cent., whereas the increase of the numbers employed in the whole United Kingdom in the same years was under 30 per cent., and in Durham only 23 per cent. Thus the numbers in Diagram II show no actual decline about the period 1886, though the slackening in the rate of increase is very perceptible.

The third diagram, illustrating the South Staffordshire District, is of a very different type, so far as concerns the numbers. We find the great increase corresponding to the high wages of 1873-74, but the fall in the numbers during 1874-79 is far greater than in other districts, and we have only a comparatively slight increase in 1888-91, although the rise in wages is very large and is still maintained. But the Staffordshire coalfields are approaching exhaustion and the mines are now being worked at a much greater distance from the pit's mouth; the out-put during the last twenty years has been stationary, whereas the out-put of the whole Kingdom between 1874 and 1892 increased by some 23 per cent. (from 141,000,000 to 182,000,000 tons). It would thus appear that there was no work for any extra hands—or only to a very limited extent—although the owners were compelled to give the men their share of the higher prices which then prevailed. An enhanced price

leads those who possess a commodity to place an increased quantity on the market, wherever this is practicable; and there is no reason to suppose that the Staffordshire coal-owners would be behind-hand in engaging more workpeople if they could have been profitably employed. This apparent exception (which occurs also in North Staffordshire) is thus due to the different circumstances of the district; there being here no room for immigrants into the industry.

Staffordshire and South Wales may be taken as illustrating the least and most prosperous coalfields of England and Wales.

In considering the diagrams there are two important points to be borne in mind.

In the first place, the population of the country has increased by something like 25 per cent. during the twenty years 1871-91, and therefore, if wages in every trade had remained stationary during that time, there is no reason to suppose that the mining population would not also have increased in the same ratio. Consequently the lower line in the diagram needs to undergo a certain modification, if we are to consider the variations relatively to the whole population. The increases are therefore slightly less rapid, and the decreases more accentuated, while the horizontal portions of the curve would show a slight fall. But with the enormous increases alluded to above, the effect of the movement of the population as a whole barely alters the direction of the black line when the numbers are rising in 1871-75 and 1888-91, whereas it emphasises the slight decreases, and renders the correspondence of the two curves more apparent.

The second point to be remembered is that the maximum in the employed (*e.g.*, in 1876) may naturally be reached subsequently to a maximum in the wages (1873-74), for although wages in the industry may be falling, they are still in excess of those paid in other industries, and so continue to attract. Another factor which may perhaps influence the migration of miners is, that legally, no person can be "allowed to work at the face of the coal until he has served an apprenticeship." But I do not know that this is of much consequence, for an influx of other labourers may have the effect of sending below the old above-ground workers. I may notice here that in the case of these latter the fluctuations are not quite so violent, although they are similar. This is only to be expected when we consider that they form only one-fifth of the total, and that the number outside, depending on the quantity of coal to be dealt with, would depend to some extent on the number engaged in actually extracting the coal.

We should naturally expect that, as the maxima in the numbers follow those in the wages, the minima would do so also,

whereas that does not always appear to be the case. For in 1879 the rise in the numbers commences before the rise in the wages. This I take to be due, at least in part, to the state of employment in other trades, which naturally affects coal mining in an opposite manner to what the same condition in the coal industry would do. 1879 was an exceptionally bad year for trade, and still more so for agriculture, and it seems very possible that some persons finding no employment in their ordinary occupations turned to the mines. As regards the rise commencing in Durham in 1888, however, there is a much more probable cause in a serious reduction of wages in Northumberland, which may have affected the neighbouring county. That this is at least a cause seems to be borne out by the fact that the increase in Durham in 1888 is out of all proportion to the increase in the whole country, which is only very slight. I shall refer to this again later. But I do not desire to lay stress on any points of similarity during the period 1876-88, for I do not suppose that the variations are sufficiently great to permit of trustworthy conclusions being drawn from them. It is only in the periods 1871-76 and 1889-91 that the changes are so rapid in the two curves that we can safely exclude other considerations.

I have already alluded to the fact that the wage curve (followed by the numbers curve) exhibits fluctuations very much in agreement with those of our foreign trade. If then we may accept it as a general phenomenon that an increase in wages is followed by an increase in numbers, we are face to face with what at first sight seems a paradox, for during a period of prosperity trade *generally* is brisk, and nearly all occupations are flourishing; so that there would appear to be no reason why one occupation should attract labour to the extent indicated in the diagrams. If the numbers thus rise in one industry, so should they in others. And where are they to come from? The reason is that the mining industry is peculiar in respect of the fluctuations in its wages. Scarcely any other important trade exhibits variations which can be compared to those in coal mining; they remain much steadier, and change very little.

It may perhaps be said that the actual earnings ought to have been taken rather than the wages, which do not necessarily represent the amount received by the workman. But, in the first place, it is difficult to obtain trustworthy information as to the actual earnings, and in the second, it does not seem easy to decide which of the two is the better for this purpose. Wages may perhaps be looked upon as the "expectation of earnings." By this, I mean the amount which a man may expect to gain per week or per annum according to the rate of wages. When this wage is fairly

constant he may no doubt be able to estimate pretty accurately what his earnings will come to in a week, but if there is a rise or fall of, say, 20 per cent. it does not follow that he will actually make 20 per cent. more than formerly; for he may work fewer days in the week and take more holiday, or his fellow workmen may prevent his doing more than what they consider to be his fair share. Yet to an outsider, undecided what employment to look for, wages have risen 20 per cent., and he will accordingly apply for work at this rate, although he may perhaps actually make but very little more than he would have done at the lower rate. But it is very probable that the nominal rise will have an important effect in attracting labour.

When work is proceeding regularly, it probably does not much matter whether we draw deductions from earnings or wages, but at irregular periods, such as during a strike, there is all the difference in the world. The nominal rate of wages may remain, and generally does remain, constant whilst the strike is actually in progress, but the earnings are of course *nil*. The effect on the numbers is extremely difficult to appreciate. I have an example of a strike in the fourth diagram. This applies to Northumberland. Here the upper line, as before, indicates the course of wages taken from the Reports of the Labour Commission. The dotted line represents the actual annual earnings as estimated by Mr. J. G. Weeks (see Note, p. 637), a witness before the Labour Commission.¹ These earnings, although estimated generally higher than the wages, agree very closely with the figures of Mr. R. Young, another witness, whose estimate indeed is slightly above that of Mr. Weeks. During the year 1887, there took place in Northumberland a strike of seventeen weeks' duration, or just one-third of a year, and the effect of this is shown in the drop in the dotted line. The strike began at the end of January, in consequence of a proposed reduction of $12\frac{1}{2}$ per cent. in wages, to which the men were after all obliged to submit when the strike ended early in June. This reduction appears in the wage line. Mr. Weeks' estimate of the earnings in that year is just about two-thirds of the amount earned in 1886 and in 1888, from which the deduction might be drawn that, had there been no strike, the *earnings* would have been much the same during the three years 1886-7-8. It will be seen that the numbers in 1887 show no diminution, but that a slight decline takes place in 1888, apparently following the fall in wages, and subsequent to the strike.

We unfortunately do not possess statistics of the numbers employed month by month, and merely annual statistics do not

¹ Parliamentary Paper C-6708, iv, questions 2893—94.

enable us to draw any trustworthy conclusions from the slight fluctuations in the numbers in 1887 and 1888. The numbers given represent the "usual number employed each day" during the course of the year, and we cannot consequently ascertain what we really require to know, viz., the number of persons who had no other employment during the time of the strike. Some persons might perhaps have found work elsewhere during the strike, and might or might not return on its termination. We have no clue to guide us as to any idea of the number of these persons.

I mentioned above that the fall in wages in Northumberland in 1887 might very probably be the cause of the excessive increase in Durham in 1888. A comparison between Diagrams I and IV will show that in the latter county wages remained practically constant in 1887 and 1888, whilst in Northumberland they were depressed $12\frac{1}{2}$ per cent. below their former level. We should thus expect to see labour being drawn away from the northern county. So far as we may judge from the annual figures of the numbers employed, the diagrams bear this out, since in 1888 numbers rise in Durham and fall in Northumberland.

The last few paragraphs lead me to conclude that we have no sufficient data at our command to discriminate between the effect of the earnings, as distinct from the wages, on the numbers employed. But I am inclined to think that the influence of the wages in attracting labour is at least as great as that of the earnings, if indeed it is not greater.

It must also be borne in mind that the estimates of earnings are necessarily more or less supposititious, and that much less reliance could consequently be placed on deductions drawn from them; whereas the movements of wages are accurately known.

A point which must not be lost sight of in drawing conclusions from these diagrams is that the curves represent money wages, and not real wages. Prices of most things, have, on the whole, been reduced during the period under review, and the real wages of the miners are consequently somewhat higher during the later years, as compared with the earlier years, than the diagrams appear to show. The fact that cottages are provided in the North, and not in the South, also, does not produce any appreciable effect on the numbers in the northern counties. But the same reasons which lead me to believe that nominal wages may have as great an influence on migration as the actual earnings—namely the tendency of the British workman (especially when young) not to look much beyond the fact that "wages have risen"—leave room equally for the possibility that money wages are of as much importance in attracting labour as real wages. It is not as a rule until the man has had experience of the conditions of life in a new

district, that he appreciates the difference between real and money wages.

It is even more difficult to trace the influence of short time, and I have not attempted to do so. It is not sufficient, as we have seen, to have merely the annual number employed in order to elucidate the effect upon migration of such large factors as strikes; and a still more minute investigation would be required if we were to attempt to discuss the subtle influence of short time. The Labour Department of the Board of Trade has taken a step in the right direction by asking for a return of the number of the employed in every month. It may possibly prove inconvenient to those who are called upon to provide such a return, and the results may prove meagre, but if we can only have continuous returns in a few districts, or even for a few collieries, the results will be valuable. The effect of the Northumberland strike of 1887 on the movement of the population might perhaps have been clearly brought out if we had had the numbers month by month; even although the data for February to May, when the strike was in force, were omitted.

Hours of labour are another question into which I have not entered. Obviously, *ceteris paribus*, shorter hours will attract a certain amount of labour, but how far they compete with an increase of wages, I am not able to judge. Everything depends on the individual, and there is no doubt that a large proportion of individuals are content to work as little as possible so long as they have enough to live upon, and that a considerably greater wage for half an hour's extra work will have no charms for them. I believe that this remark is especially applicable to coal mining.

I should have liked to show the other side of the picture, and as in these diagrams we see the mining industry drawing labour to itself when its rate of remuneration is raised, so to show some other occupation from which labour is being drawn when mining wages rise, or in fact whenever there is a marked difference of level. The only case in which a glimpse of the other side could be obtained was the possible migration, investigated above, between Northumberland and Durham, when there was a marked difference in the level of wages in 1888. The difficulty is perhaps greatest in the case of agriculture. There is very little doubt that many of the new hands in the mines have been drawn from the farm, but the "rural exodus" as it has been called is a more general phenomenon which has constantly been going on during the period under review, and we have no information as to any peculiar fluctuations, if they existed, in the agricultural population in the critical years when mining wages were fluctuating so violently. In industrial districts, such as those in the north, I believe that these

“migratory miners” (if I may call them so) include a large number of skilled mechanics who divide their time between mining and their other handicraft, according as either industry offers a better chance of profit.

Considering finally the conclusions to be drawn as to the nature of the connection between the two curves on the diagrams, they would seem to convey some suggestions as to the law of the supply and demand of labour, at least in the coal mining industry. The great correspondence between the curves of wages and numbers justifies the conclusion, as is indeed recognised, that the one depends upon the other to a very great extent, and it would seem that it is the numbers which depend on the wages. In coming to this conclusion, the great influence of the sliding scale must be borne in mind, for this principle is everywhere in force, even in those districts where a scale does not actually determine the rate of remuneration. The organisation of the men is very complete, and they are strong enough to obtain an advance in wages whenever there is a rise in prices. Wages then now practically depend only on the price of the coal, which price is regulated by the demand and supply of that mineral (though efforts are often made, hitherto without much success, to enhance the price by diminishing the supply). The action of the sliding scale is especially important, in that an employer cannot lower the rate of wages when the number of persons seeking employment is very large, unless there is a corresponding fall in the price of coal. Nor, on the other hand, can he afford to raise wages in order to attract more workers, unless the price of coal is also raised. These considerations seem to preclude the theory that the wages depend on the supply of labour, and that an employer can control the number of his men by lowering wages.

The supply of labour, in coal-mining, seems now to have hardly any effect in settling the remuneration, although no doubt it would have, if the supply were limited. But there appear to be now sufficient applicants for the work to enable us to consider the supply as almost constantly in excess of the number required. If prices rise, the mine-owner can generally increase his production by opening inferior seams,² and he always

² In coal-mining the increased numbers are for the most part set to extract coal from seams which cannot be worked at a profit when prices are low. As the cost of production thus increases with the quantity produced (in so far as the extra quantity is from inferior seams), it appears fair to assume that the numbers do not rise so much as they would do if an increased quantity could be produced at the same cost per unit, and that the full effect of a rise of wages in attracting labour is not brought out in the coal-mining industry. South Staffordshire represents the extreme case where the increased difficulty in working other seams (or their greater distance from the pit's mouth) leaves room for but few extra hands.

appears to be able to secure sufficient labour by the rise in wages which he is compelled to give, not because he wants the extra hands, but because it is demanded by the old hands.

The conditions prevailing in the coal-mining industry, it has been pointed out, are peculiar, so that it is dangerous to generalise, and to say that the numbers follow the wages in other employments. The important factor appears to be the more or less complete organisation of labour in the industry. In the more skilled industries, the organisation of the workmen is, generally, more complete than in the unskilled, and the trades unions are generally more powerful. In such industries, accordingly, the men are better able to enforce their demand for higher wages when prices rise; the connection between wages and prices is more intimate; the supply of labour is of less importance, and there is a greater tendency for the numbers to follow the wages. Whereas in industries where there is less combination among the labourers, such as in agriculture (where there is also a more limited supply of labour), the number of persons seeking employment is of much more importance in settling the wages, and the direct dependence of the numbers on the wages is much less evident.

NOTE.—In the first diagram the numbers of the employed in the years 1871-73 have been partly estimated. To get at the numbers for *Durham county*, to which area the wages apply, it has been necessary to add together the numbers for North Durham and South Durham; the first forming part of what is called the Newcastle district, and the other part of the Durham district. Only since 1874 have the numbers been given in detail for each county or part of a county. For the years 1871-73 the only figures obtainable are for the Newcastle district, as well as those for South Durham. I have therefore been obliged to assume that, of all those employed in the Newcastle district, about two-fifths were employed in North Durham, this being the fairly constant proportion during the succeeding years 1874-79. Cumberland and Northumberland are similarly estimated. The South Durham district is given separately in the former years, since practically the only other mines included now in the Durham district are the Cleveland ironstone miners, which before 1874 were not under the Coal Mines Regulation Act. Consequently only the numbers in North Durham, *i.e.*, about one-fourth of the whole, have been estimated, and the error in the estimated numbers for 1871-73 cannot amount to anything like 1,000, and could not alter the diagram.

The totals for 1871-72 exclude also ironstone miners and females, so that in the diagrams an estimated number has been added on these two accounts to those given in Table B. Fortunately, both these causes affect only slightly the districts illustrated. To South Stafford have been added, in 1871-72, 1,000; to South Wales 1,500 (a closer approximation is useless, as it would be quite inappreciable in the diagrams). No ironstone is raised in the counties of Durham or Northumberland, and but little in South Stafford and South Wales.

The number of ironstone miners and of females in 1873 is given as follows:—

Districts.	Ironstone Miners.	Females.
Durham	—	} 309
Northumberland	—	
South Stafford	—	
„ Wales	1,090	1,433
		796
United Kingdom	36,254	6,204

The rates of wages represent the amounts paid to hewers, and are from tables in the Report of the *Labour Commission*, Group “A,” *Answers to Schedules, Appendix*, [Parliamentary Paper, C-6795, vii], brought up to date where necessary.

In reducing the earnings to the “level of 1871” in Diagram IV, I have *assumed* that the earnings were in 1879, like the wages, $21\frac{1}{4}$ per cent. below the level of 1871. This has been done for convenience only. It is evident that, whatever the basis, with every rise or fall in the earnings, the percentages will also rise or fall; the *amount* of the rise or fall is here immaterial.

APPENDIX.—TABLE A.

(1.) *Estimated Earnings per Hewer per Annum in NORTHUMBERLAND.*

(Evidence of J. G. Weeks before Labour Commission, Group “A.”
Vol. I [C-6708—iv], Question 2893—4.)

	£		£
1877	54	1884	60
'78	53	'85	55
'79	55	'86	54
1880	56	'87	38*
'81	58	'88	53
'82	61	'89	66
'83	63	1890	80

* Seventeen weeks' strike.

APPENDIX.

TABLE A.—RATES OF WAGES.

(2.) DUREHAM.			(3.) SOUTH STAFFORDSHIRE AND EAST WORCESTERSHIRE.		
Date.	Wages per Day, 6 Hours.	Above or below 1871.	Date.	Wages per Day (Thick Coal Miners).	Above or below 1864 or 1871.
	s. d.	Per cent.		s. d.	Per cent.
1871.....	....	....	1864, July	4 6	....
'72, Feb. ....	....	+ 20	'68, May	4 -	- 11'1
„ July	6 6½	+ 38	'69, Nov.	4 6	....
1873, Feb.	7 6½	+ 58'7	'71, Sept.	5 -	+ 11'1
'74, April....	6 9½	+ 42'8	'73, Feb.	5 6	+ 22'2
„ Nov.	6 2¼	+ 30	'74, July	4 6	....
1875, April....	5 10½	+ 23'5	„ Oct.	4 -	- 11'1
'76, Feb.	5 4½	+ 14'86	1875, July	3 6	- 22'2
„ Sept.	5 -¾	+ 7'97	„ Nov.	4 -	- 11'1
1877, April....	4 8½	- 0'13	1876, May	3 6	- 22'2
'79, May	4 3'3	- 8'87	'77, Nov.	3 -	- 33'3
„ July	4 2	- 10	'79, May	2 9	- 38'8
1880, Dec.	4 3¼	- 7'76	„ Nov.	3 -	- 33'3
'82, April....	4 5'1	- 4'39	„ Dec.	3 3	- 27'7
„ Aug.	4 4'5	- 5'51	1880, Jan.	3 6	- 22'2
„ Nov.	4 5'1	- 4'39	„ April....	3 3	- 27'7
1883, Feb.	4 5'8	- 3'26	„ June	3 -	- 33'3
„ July 20*	4 6½	....	1881, Feb.	3 3	- 27'7
1884, Aug.	4 5¾	- 4'39	„ April....	3 -	- 33'3
'85, May	4 5	- 5'51	„ Oct.	3 3	- 27'7
'86, „	4 4¼	- 6'64	1882, Jan.	3 4	- 25'9
'88, Feb.	4 5	- 5'51	„ Oct.	3 8	- 18'5
„ May	4 4¼	- 6'64	1884, June	3 4	- 25'9
„ Aug.	4 3½	- 7'76	1889, Feb.	3 8	- 18'5
„ Nov.	4 4¼	- 6'64	„ June	3 10	- 14'8
1889, Feb.	4 5	- 6'51	„ Sept.	4 -	- 11'1
„ Aug.	4 11	+ 3'49	„ Dec.	4 4	- 3'7
„ Dec.	5 5	+ 12'49	1890, April....	4 8	+ 3'7
1890, March..	5 8	+ 17			
'91, Jan.	5 11	+ 21'5			

* Agreed that each 1¼ per cent. shall vary hewers' wages ¾d. per shift.

TABLE A.—RATES OF WAGES—*Contd.*

(4.) SOUTH WALES.		(5.) NORTHUMBERLAND (Steam Coal).		
Date.	Above or below 1879.	Date.	Wages per Day, 6 Hours.	Above or below 1871.
	Per cent.		<i>s. d.</i>	Per cent.
1879, December .	....	1871	6 1	....
'80, February...	+ 5	'72, February ..	6 8 $\frac{1}{4}$	+ 10
'81, July | .....	+ 7 $\frac{1}{2}$	,, July	8 $-\frac{1}{2}$	+ 32
,, November..	+ 10	1873, March.....	9 1 $\frac{1}{2}$	+ 50
1882, June	+ 15	'74, April	8 6 $\frac{1}{4}$	+ 40
'83, November..	+ 17 $\frac{1}{2}$	,, October	7 8	+ 26
'85 March.....	+ 15	1875, March.....	7 $-\frac{1}{2}$	+ 16
,, July	+ 12 $\frac{1}{2}$	'76, February ..	6 6 $\frac{3}{4}$	+ 8
,, November..	+ 10	,, October	6 1	....
1886, March.....	+ 7 $\frac{1}{2}$	1877, December .	5 3·9	- 12 $\frac{1}{2}$
,, November..	+ 5	'78, November..	4 9·5	- 21 $\frac{1}{4}$
1887, March.....	+ 2 $\frac{1}{2}$	'80, January	4 8·1	- 23·2
'88, November..	+ 7 $\frac{1}{2}$	,, July.....	4 9·5	- 21 $\frac{1}{4}$
'89, April	+ 15	1881, April	4 8·1	- 23·2
,, May.....	+ 17 $\frac{1}{2}$	,, September.	4 9·5	- 21 $\frac{1}{4}$
,, September	+ 22 $\frac{1}{2}$	1883, March.....	4 10·9	- 19·3
,, October	+ 25	,, April	4 10·2	- 20·3
1890, January	+ 32 $\frac{1}{2}$	,, July.....	4 10·9	- 19·3
,, May.....	+ 46 $\frac{1}{4}$	,, October	5 0·4	- 17·3
,, August	+ 50	1884, January	4 11·7	- 18·3
,, November..	+ 52 $\frac{1}{2}$	,, April	4 10·9	- 19·3
1891, February...	+ 55	,, October	4 11·7	- 18·3
,, May.....	+ 57 $\frac{1}{2}$	1885, January	4 10·9	- 19·3
,, November..	+ 53 $\frac{3}{4}$	,, April	4 10·2	- 20·3
1892, January	+ 46 $\frac{1}{4}$	1886, January	4 9·5	- 21 $\frac{1}{4}$
,, February ..	+ 40 $\frac{3}{4}$	'87, May	4 2·3	- 31·1
,, April	+ 40	'88, November..	4 5·2	- 27·6
,, June,	+ 36 $\frac{1}{4}$	'89, February ..	4 9·5	- 21 $\frac{1}{4}$
,, August	+ 33 $\frac{3}{4}$	,, March.....	4 10·7	- 19·7
,, October	+ 28 $\frac{3}{4}$	,, June	5 1·2	- 15·7
,, December..	+ 22 $\frac{1}{2}$	,, September.	5 3·3	- 13·4
		,, December..	5 9	- 5·5
		1890, March.....	6 1·3	+ 0·4
		,, July.....	6 2·8	+ 2·4
		,, October	6 3·5	+ 3·3
		1891, February ..	6 2·8	+ 2·4

TABLE B.—*Persons Employed in and about the Mines under the Coal Mines Regulation Act in each Mining District and certain Counties of the United Kingdom.*
 [From the Annual Reports of the Inspectors of Mines.]

	1871.*	1872.*	1873.	1874.	1875.	1876.	1877.
1. Cumberland	<i>4,400</i>	<i>4,700</i>	<i>5,500</i>	5,678	6,508	6,024	5,821
Durham, North	<i>14,000</i>	<i>15,500</i>	<i>18,000</i>	18,870	18,208	18,727	18,327
Northumberland	<i>17,600</i>	<i>18,800</i>	<i>23,500</i>	24,581	25,354	24,003	23,871
1. Newcastle district	36,000	39,000	47,208	49,129	50,070	48,754	48,019
2. Durham, South	45,000	45,300	53,334	55,683	58,576	58,365	56,430
York, N. Riding	—	—	9,350	9,845	9,788	9,851	8,569
2. Durham district	—	—	62,707	65,541	68,383	68,231	65,014
3. Lancashire, N. and E.	26,110	28,657	31,882	32,828	33,006	30,382	29,344
Ireland	—	—	1,950	1,651	1,544	1,365	1,248
3. Manchester district	—	—	33,832	34,479	34,550	31,747	30,592
4. Lancashire, W.	—	—	29,324	29,522	31,538	30,193	29,546
4. Liverpool district	32,218	34,000	42,300	43,658	45,136	42,174	40,342
5. York, E. and W. Ridings	—	—	57,523	62,499	62,190	61,017	60,594
5. Yorkshire district	38,600	51,056	57,659	62,580	62,459	61,261	60,777
6. Derbyshire	—	—	28,123	30,480	30,097	29,586	28,081
Nottinghamshire	—	—	10,366	12,228	12,713	13,605	13,392
6. Midland district	31,050	39,285	46,974	52,379	52,477	52,348	50,281
7. N. Staffordshire	—	—	—	20,756	19,595	18,561	17,951
7. Staffordshire, N. district	21,200	27,753	30,621	31,744	30,056	27,779	26,131
8. S. Staffordshire	—	—	—	—	—	—	—
8. Staffordshire, S. district	31,000	31,500	36,829	36,855	35,668	32,792	28,760
9. Monmouthshire	—	—	—	18,428	18,001	18,126	17,811
Glamorganshire (part)....	—	—	—	2,874	2,629	2,356	2,191
9. South Western district	26,881	32,471	35,352	34,852	34,136	33,244	31,901
10. Glamorganshire (other } part)	—	—	—	—	—	41,678	41,661
10. South Wales district	37,960	38,427	46,564	51,513	51,248	46,319	44,811
11. Scotland, East	27,300	30,000	40,293	43,348	41,314	40,832	39,761
12. Scotland, West	19,561	20,639	32,800	32,751	30,348	29,045	27,981
TOTAL United Kingdom....	370,881*	418,088*	512,199	538,829	535,845	514,532	494,391

* In 1871-72 ironstone miners and females are not included in the returns, and Ireland also excluded. The figures in italics are estimated; see NOTE, p. 636.

TABLE B.—*Persons Employed in and about Mines under Coal Mines Regulation Act—Contd.*

	1878.	1879.	1880.	1881.	1882.	1883.	1884.
1. Cumberland	5,778	5,809	5,944	6,175	6,147	6,368	6,480
Durham, North	18,036	17,900	18,528	18,481	19,529	19,621	20,403
Northumberland	21,580	22,153	23,048	22,740	23,368	23,793	25,423
1. Newcastle district	45,394	45,862	47,520	47,396	49,044	49,782	52,306
2. Durham, South	52,889	49,556	53,224	54,810	55,969	57,067	56,533
York, N. Riding	6,791	7,159	7,972	—	—	—	—
2. Durham district	59,697	56,734	61,212	62,947	63,989	65,310	63,625
3. Lancashire, N. and E.	29,789	30,757	30,977	31,673	31,607	32,466	31,919
Ireland	1,222	1,115	1,071	1,070	1,002	972	925
3. Manchester district	31,011	31,872	32,048	32,743	32,609	33,438	32,844
4. Lancashire, W.	29,380	29,316	29,246	29,454	30,397	31,625	31,730
4. Liverpool district	39,024	39,458	39,454	39,630	40,495	41,720	41,905
York, E. and W. Ridings ..	59,777	60,087	60,474	60,531	61,548	63,248	64,046
5. Yorkshire district	59,951	60,221	60,619	60,644	61,687	63,388	64,176
Derbyshire	26,975	27,859	27,256	27,422	27,359	27,904	29,057
Nottinghamshire	13,911	14,231	13,592	14,044	14,335	15,286	15,333
5. Midland district	49,354	50,923	49,330	49,979	49,899	52,118	53,278
N. Staffordshire	16,908	16,006	15,580	17,321	18,267	17,993	16,717
7. Staffordshire, N. district ..	24,601	23,161	22,852	24,499	25,355	24,689	23,277
S. Staffordshire	—	20,106	20,158	20,575	23,773	21,063	21,047
8. Staffordshire, S. district ..	25,103	23,555	23,493	23,806	26,673	23,782	23,816
Monmouthshire	17,117	15,799	16,123	16,951	17,787	19,663	20,461
Glamorganshire (part)	2,365	2,389	2,337	2,199	2,244	2,292	2,389
9. South Western district ..	30,874	30,060	29,811	31,044	31,672	33,759	34,945
Glamorganshire (other } part)	41,088	44,692	47,171	50,197	51,601	54,952	57,615
10. South Wales district	43,934	47,964	50,416	53,452	54,658	58,495	60,779
Scotland, East	40,908	40,711	41,276	42,721	42,420	43,606	45,082
Scotland, West	26,288	26,289	26,882	26,616	25,486	24,886	24,343
TOTAL United Kingdom	475,329	476,810	484,933	495,477	503,987	514,933	520,376

TABLE B.—*Persons Employed in and about Mines under Coal Mines Regulation Act—Con*

	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
1. Cumberland	6,780	6,715	6,889	6,467	6,444	7,133	7,785	7,785
Durham, North	19,712	20,815	20,463	22,237	22,692	24,211	26,433	26,433
Northumberland	26,519	25,018	25,705	25,202	27,641	30,041	30,816	31,111
1. Newcastle district	53,011	52,548	53,057	53,906	56,777	61,385	65,034	66,888
2. Durham, South.....	55,729	54,944	55,445	56,535	58,620	62,588	66,155	65,111
York, N. Riding	—	—	—	—	—	—	—	—
2. Durham district	62,484	60,903	61,223	62,422	65,205	69,198	72,272	70,111
3. Lancashire, N. and E.	31,640	31,767	31,466	31,701	33,438	35,686	37,755	39,111
Ireland	860	864	849	779	751	772	742	742
3. Manchester district ...	32,500	32,631	32,315	32,480	34,189	36,458	38,497	39,111
4. Lancashire, W.	32,251	32,940	33,887	34,111	34,896	38,522	40,798	42,111
4. Liverpool district	41,565	42,245	43,667	44,262	45,655	50,796	53,587	55,111
5. York, E. and W. Ridings	63,562	65,734	66,904	66,895	69,917	76,776	82,037	86,111
5. Yorkshire district	63,677	65,840	67,015	67,009	70,062	76,893	82,165	86,111
6. Derbyshire.....	29,924	30,018	29,737	31,168	32,285	35,148	38,162	40,111
Nottinghamshire	15,974	16,147	17,018	17,380	18,853	20,390	21,512	22,111
6. Midland district	55,163	55,176	55,898	57,935	61,279	66,468	71,540	74,111
7. N. Staffordshire	15,545	16,733	15,503	16,364	17,046	18,321	17,963	18,111
7. Staffordshire, N. district	21,889	22,769	21,220	22,348	22,911	24,143	23,988	24,111
8. S. Staffordshire.....	20,537	19,457	19,377	19,692	20,637	22,421	23,500	23,111
8. Staffordshire, S. district	23,137	21,971	21,727	22,007	23,244	25,286	26,341	26,111
9. Monmouthshire.....	21,038	20,636	21,329	21,561	23,130	24,901	27,195	27,111
Glamorganshire (part)....	2,305	2,016	2,278	2,303	2,401	2,631	2,709	2,711
9. South Western district	35,659	34,869	35,991	36,151	38,154	40,938	43,568	42,111
10. Glamorganshire (other } part)	58,588	58,916	59,781	63,474	69,756	77,733	81,697	83,111
10. South Wales district	61,617	62,209	62,989	67,164	73,451	81,872	86,358	88,111
11. Scotland, East	46,022	46,557	47,732	46,734	42,602	46,819	50,238	52,111
12. Scotland, West	23,908	22,252	23,443	22,527	30,206	32,977	34,862	36,111
TOTAL United Kingdom....	520,632	519,970	526,277	534,945	563,735	613,233	648,450	664,111

DISTRICT TOTALS.—Besides those enumerated in the table, the districts include also following counties:—(2) Westmoreland; (4) Anglesey, Denbigh, Flint; (5) Lincoln; Leicester, Warwick; (7) Cheshire, Shropshire; (8) Worcester; (9) Brecon (part), Dorset, Gloucester, Somerset; (10) Brecon (part), Carmarthen, Pembroke.

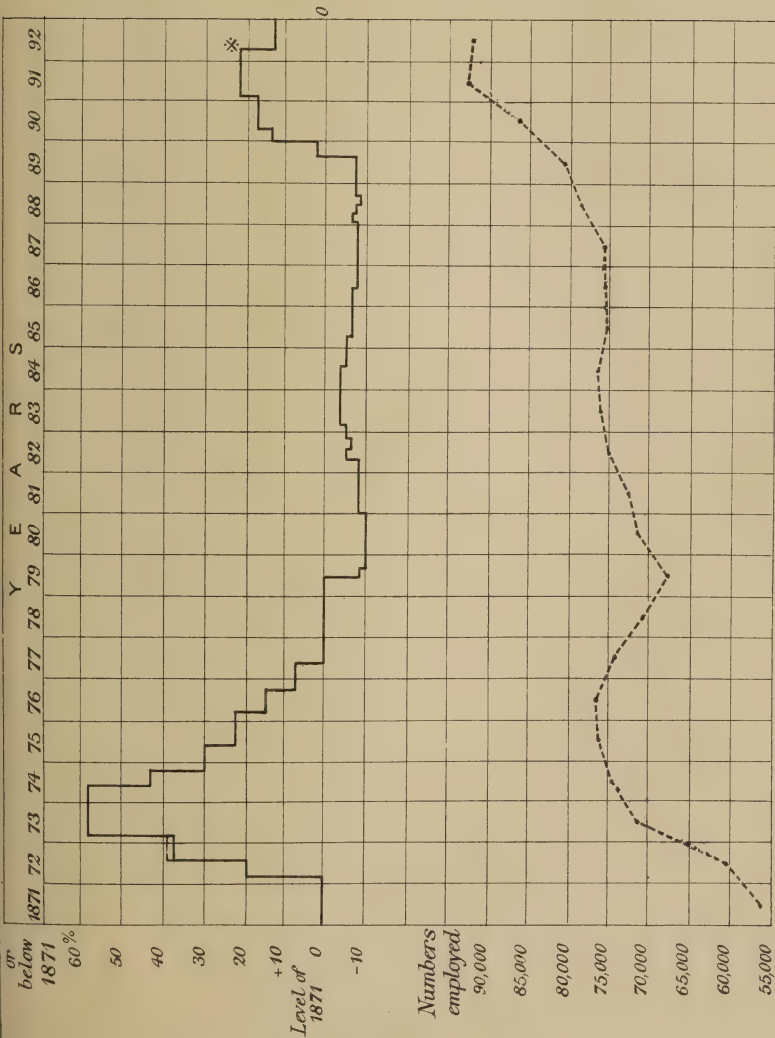
Diagram I.

DURHAM (County)

— Wages paid to Hewers.

----- Numbers employed
in the County.

* Strike.



wages

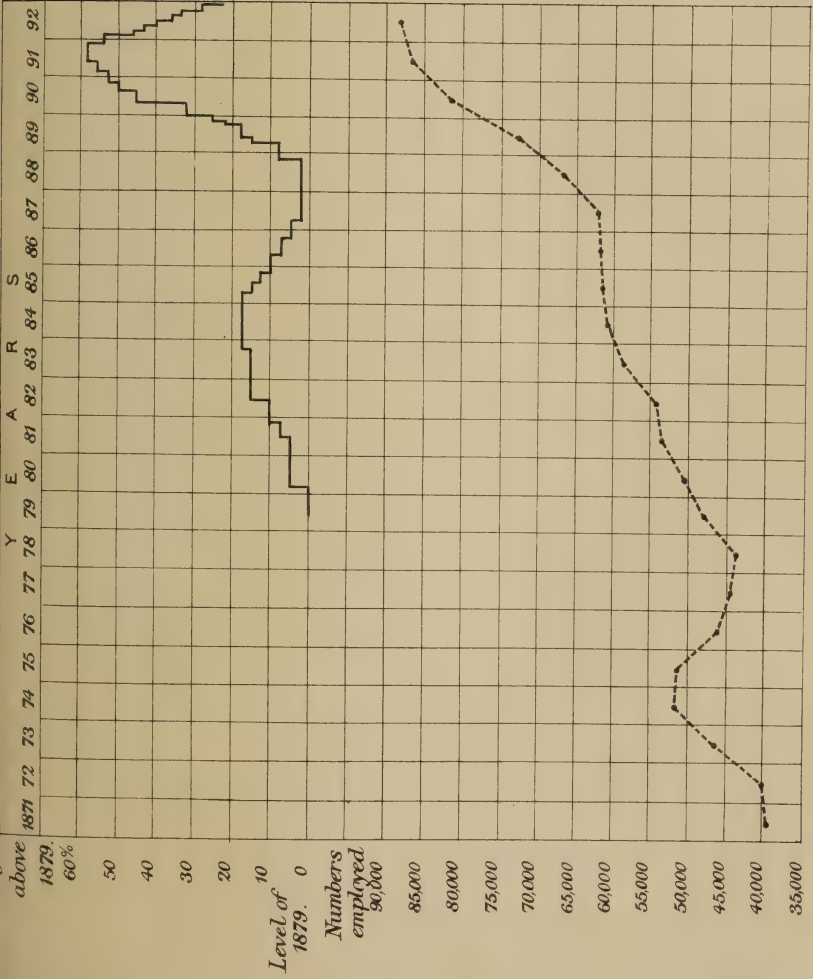


Diagram II.

SOUTH WALES
(District)

— Wages paid to Hewers.
- - - Numbers employed
in the District.

above
or
below
1871

20%
+ 10
level of
1871.

Diagram III.

SOUTH STAFFORDSHIRE AND EAST WORCESTERSHIRE (District)

— Wages paid to Hewers.
(Thick Coal Miners)

----- Numbers employed
in the District.

* Strike

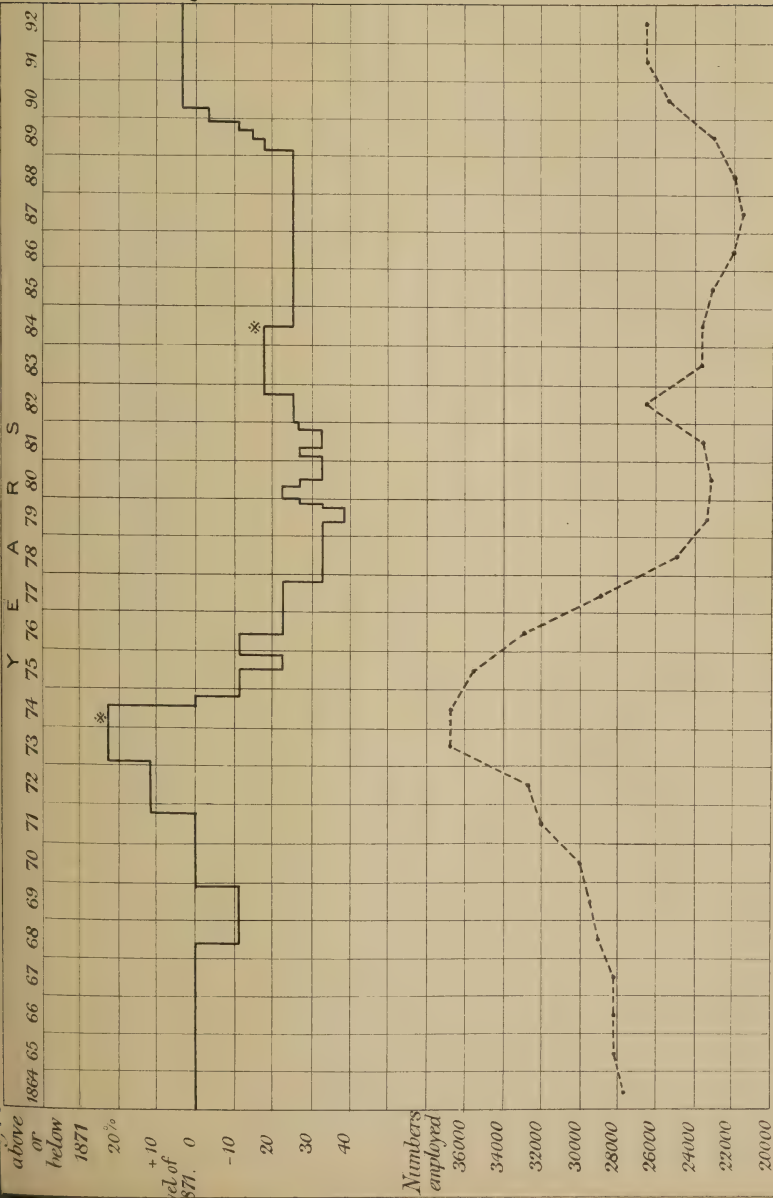


Diagram IV.

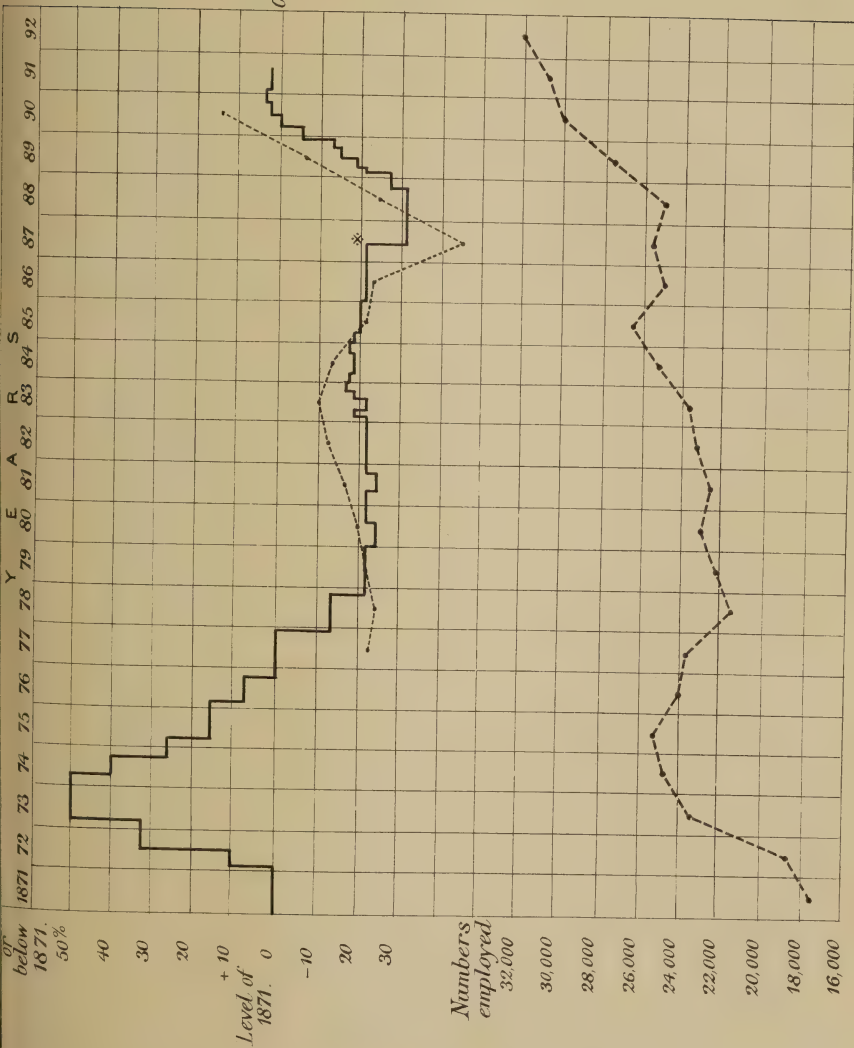
NORTHUMBERLAND.

— Wages paid to Hewers.

..... Estimated annual earnings of Hewers.

--- Numbers employed in the County.

* Strike.



*The ELEVENTH UNITED STATES CENSUS. By HON. ROBERT P. PORTER
(Superintendent of the Eleventh Census).*

[Read before the Royal Statistical Society, 4th December, 1894.
Dr. G. B. LONGSTAFF, F.R.C.P., Vice-President, in the Chair.]

YOUR President, in his able and suggestive Inaugural Address, stated that one of the functions of societies such as this was that of criticising Government work and of making suggestions for its improvement. I am entirely in accord with this idea. It is the hope therefore of advancing the study of statistics by such criticism, rather than the belief that I have anything original or novel to present, that has prompted me to take this opportunity to bring to the attention of the Royal Statistical Society some of the methods of census taking in the United States. I am sure your distinguished President will be glad to learn that there is no danger of the incumbent of the office which I had the honour to fill becoming "sleepy" so long as rival cities "boom towns" and the unfettered American press exists to disturb his slumbers. Believe me that to "stir up the Government departments" generally, and the Superintendent of Census in particular, and to "suggest additions," is with us by no means the exclusive prerogative of statistical societies. It might perhaps more appropriately be described as the divine right of the newspapers, which, as a rule, make it as lively as your President could possibly wish for the unfortunate official whose totals fall short of popular expectation and estimates. It may even surprise you to learn that the Superintendent of the last United States census was held almost personally responsible for the alleged "shortage" in the expected 64,000,000 for 1890, until the tabulation of the children under 10 years of age, showing a decrease of something like 1,600,000 children, placed the responsibility upon the people, where it rightly belonged, and not upon the "defective methods" of the Census Office.

The population under 10 years of age in 1880 was 26·7 per cent. of the total population; in 1890, 24·3 per cent. This falling off in the birth-rate finds corroboration in the fact that the size of the American family has steadily decreased from 5·55 persons in 1850 to 4·93 persons in 1890. It is undoubtedly true that certain forces and tendencies not heretofore felt, or at least not

heretofore recognised, in our national life are beginning to affect the reproductive capabilities of our people. If this falling off is not arrested, and the gates of Castle Garden, as they have done recently, continue to swing outward rather than inward, the close of the decade ending in 1900 may even be more disappointing to those who believe that numerical increase is indicative of national wealth and prosperity. Whatever the future may have in store for us in the great struggle for industrial supremacy of which we hear so much, the rate of increase of population is undoubtedly diminishing. There are many causes for this diminution, but it is not within the scope of this paper to even enumerate them. The accelerated tendency of our population towards urban life has undoubtedly been one of the chief causes, the last census showing that 30 per cent. of the population is now concentrated in cities having a population of more than 8,000.

The results of our several censuses indicate that in newly settled territories the size of families is small at first, but increases steadily as settlement goes on. When the population becomes more or less urban in character the maximum is reached, followed by a constantly receding average—a receding average accentuated by the fact that in a city like New York only $16\frac{1}{2}$ per cent. of the population live in houses having 10 persons or less, while $83\frac{1}{2}$ per cent. of its entire population are herded in tenements, and flats, and various other dwellings having more than 10 occupants.

New York City is a pre-eminently gloomy example of crowding a large population in a small number of dwellings, the neighbouring City of Brooklyn coming next, immediately followed by Cincinnati, Jersey City, and Chicago, in all of which places the size of the family is rapidly decreasing. In Philadelphia, where we find the reverse conditions to New York, the size of the family has only slightly diminished, and the average size is greater than the average for the country.

The most striking feature of the Act of March, 1889, under which the Eleventh United States Census was taken, is that authorising the Superintendent to appoint as many experts and specialists as in his judgment may be required to carry on the numerous and varied inquiries with which the Census Office is burdened. It is true that the compensation of such experts is limited to a small sum, and actual necessary travelling expenses, but this does not deter a man who is keen and enthusiastic on his subject from taking advantage of an opportunity to conduct an investigation which is sure to add to his knowledge and reputation. Under this section of the law I was able to enlist men of reputation as statisticians and publicists who took up the work, giving, of course, as much attention to it as they could spare from their

regular pursuits. The Census Office could not claim the entire services of well-known experts, but they were retained, and, whenever required, the Office was entitled to their experience and knowledge. In the employment of experts of this class it was, of course, understood that the reports compiled under their direction should have the name of the compiler on the title page. Nor, as a rule, is it expected that men of the type referred to should take a personal supervision of their office force. In most cases I endeavoured to furnish an experienced routine man who would act as chief of the division and prepare the detail work in accordance with the plan of the expert, after approval by the Superintendent.

In this way we were able to call in such specialists as Dr. John S. Billings, our best authority on vital statistics; Professor Henry C. Adams, of Ann Arbor College, the railway specialist; S. N. D. North, of Boston, the well-known authority on the textile trades; Henry Gannett, the geographer; Dr. Henry K. Carroll, of New York, the authority on statistics of churches; Dr. Frederick H. Wines, of Illinois, who, following in the footsteps of his distinguished father, has become one of the first authorities on pauperism and crime; Frank R. Williams, a most intelligent student of the statistics of manufactures; Dr. David T. Day, the mining expert of the United States Geological Survey; Richard P. Rothwell, the gold and silver specialist, and author of a work on the subject of great statistical value; Thomas Donaldson, of Philadelphia, who has made a life study of the Indians on every reservation; Henry Bower, the chemist; James M. Swank, the authority on iron and steel, and a score of other men less generally known, but who have been more or less brought into prominence by the character of their statistical work on the Eleventh Census, and whose final report gives them a position in the statistical world. I refer to such men as George K. Holmes and John S. Lord, who successfully concluded the unique inquiry into individual mortgages; J. K. Upton, who has taken a decided step in advance in the treatment of public debts, and has completed an exhaustive inquiry into local finance of every description; Thomas J. Vivian, of California, who gives us a long needed and valuable report on Coastwise, Lake, and River Commerce; William C. Hunt, trained by Carroll D. Wright, in the Massachusetts Bureau of Statistics, who had charge of the tabulation of population statistics by the Hollerith punched card and electrical counting system; and William A. King, who, by the use of this machine, compiled the vital statistics for 1890. The employment in this work of men of the class above mentioned made it possible to divide the work into the following twenty-five divisions:—

Superintendent, chief clerk, assistant chief clerk.

First Division.—Appointments.

Second Division.—Disbursements and accounts.

Third Division.—Geography.

Fourth Division.—Population.

Fifth Division.—Vital statistics.

Sixth Division.—Church statistics.

Seventh Division.—Educational statistics.

Eighth Division.—Pauperism and crime.

Ninth Division.—Wealth, debt, and taxation.

Tenth Division.—National and State finances.

Eleventh Division.—Farms, homes, and mortgages.

Twelfth Division.—Agriculture.

Thirteenth Division.—Manufactures.

Fourteenth Division.—Mines and mining.

Fifteenth Division.—Fish and fisheries.

Sixteenth Division.—Transportation.

Seventeenth Division.—Insurance.

Eighteenth Division.—Printing and stationery.

Nineteenth Division.—Statistics of special classes.

Twentieth Division.—Supervisors' correspondence.

Twenty-first Division.—Alaska.

Twenty-second Division.—Statistics of Indians.

Twenty-third Division.—Social statistics of cities.

Twenty-fourth Division.—Accounts, farms, homes, and mortgages.

Twenty-fifth Division.—Revision and results.

This method gives just the sort of individuality to the work which Lord Farrer said in the address referred to was so necessary to successful statistical inquiry. I never stopped to inquire the economic views of these gentlemen. Some of them, like Mr. Giffen, entertain decided views on free trade, and others, perhaps, are misguided protectionists like myself. This I do know, that all of them laboured for a purpose, with distinct notions of the subject in hand. It has occurred to me that possibly we have here a combination of Government statistical work with the work of individuals. Within the limits of a given appropriation, and subject to certain agreed methods of treatment, necessary to avoid confusion and insure uniformity, these gentlemen were free to carry on their respective investigations in their own way, and arrive at their own conclusions. It is gratifying to inform you that, while, as I have said, the Census Office proper was condemned for falling short of the popular estimate of population, no fault whatever has been found with what we term the "special work."

Statesmen of the orthodox English school of political economy would come to my office and study the results arrived at by experts who entertained entirely opposite opinions. The perfect fairness of the statistical figures was never called in question. Indeed, the Census Department in the United States, with its council of statisticians, representing decided and varied schools of economic thought, may not inaptly be compared to the council of a statistical society with a fund of two millions sterling to carry on useful investigations. If this individuality were not injected into the work, the result would simply be a vast mass of undigested figures, which, unlike Merlin's mysterious volumes, even the authors would not understand, and which would absolutely mislead rather than elucidate the problems confronting us and our newer civilization.

In less intelligent and trained hands than those of Mr. Holmes or Mr. Lord, what would have become of the demand of Congress to investigate and report on the individual mortgage debt of the United States? Who but a Dr. Billings, whose life has been dedicated to the study of the national health and the physical condition of the people, could have brought together results from such varied sources and so wide a range of conditions? Results which will be of as much value to us in shaping State and municipal legislation as the inquiries conducted by your late President, Mr. Charles Booth, concerning the condition of the dependent, defective, and delinquent classes of England. With less experience and enthusiasm than displayed by Dr. Carroll, we could not have hoped for the most exhaustive and probably most accurate report on the Religious Societies of the United States: a work that stands unique and alone so far as our country is concerned, as all other attempts to collect this data had been lamentable failures.

In the same way the individual enthusiasm of Mr. Donaldson has, through the Eleventh Census, given us the two most valuable reports ever made on the condition of the North American Indians. These reports have been modernised by something like 2,000 photographic illustrations, thus laying before Congress facts which have already influenced legislation on this difficult, but as a rule non-partisan, question. Of course these gentlemen have *views*; but I heartily agree with Lord Farrer that they are none the worse for that. In statistical investigations my experience has led me to shun the man without individual views. He is too apt to wander all over space for his materials, and when the hour arrives to come down to the hard road of published results, he is as far from conclusions as the day he started. We have had several costly experiments, both in the Tenth and Eleventh Censuses,

with the hueless or viewless statistician, and have invariably found him both expensive and dangerous. I will not weary you by giving you further illustrations, though the list is by no means exhausted. Our experience in the United States teaches that something besides dry bones is required of the statistician. Statistics to be of value and of human interest must be composed of flesh and blood as well as of bone, and even a little latter day economic truth by way of raiment is by no means objectionable to broad minded thinkers and statesmen.

The character and range of the work required by law of the United States Census Bureau outside of population would make it simply impossible to do it without the aid of experts. I do not wish to be understood as criticising in any way the methods of the English census, which are no doubt entirely adequate when the scope of the work required by your census law is considered. I doubt the advisability of adding all these inquiries to what may be termed the census proper. Our system has its weakness as well as its strength. The fundamental weakness is in the fact that the office is not permanent. Worse than this, we have neither the trained experts in the permanent civil service as you have, nor the registrars of births and deaths to call upon to help in the matter. On the morning of 17th April, 1889, the Bureau did not exist. At noon on that day the President handed me a commission, and when I took my oath of office, the Census Office was ushered into existence. The result of that day's labour was the appointment of a chief clerk and a messenger boy. From this the office was enlarged until we occupied ten different buildings, and employed 3,000 clerks, 2,500 special agents, 150 experts, and when the enumeration was in progress, had an army of 50,000 on the pay rolls. To organise such a force out of the floating material available, I think you will admit, is not altogether a satisfactory task. With the single exception of the State of Massachusetts, where we utilized the excellent Bureau of Statistics by appointing the Chief of the Bureau Supervisor of Census for the State, we have no officials, no trained enumerators to call upon. Each of the half-hundred States and territories, including Alaska, has to be taken up separately, studied from a geographical point of view, divided into supervisor districts, and subsequently, by the aid of the 175 census supervisors which the law allows for the entire country, divided into convenient enumerator districts.

Success therefore largely depends upon securing at Washington the services of as many as possible of the experts, special agents, chiefs of divisions, and high grade clerks who took part in the preceding census. This is not an easy matter, for naturally the

best trained routine men have obtained permanent employment either in other departments of the Government, from which they cannot be spared, or in business offices. While our system of census taking is flexible enough when it is once set in motion, the weakness of it lies in the fact that each succeeding census must be begun all over again, and built up by entirely different hands. In my own case it happens I was associated with my eminent predecessor, General Francis A. Walker, in the Tenth Census, and by the aid of as many of my former colleagues as could be induced to take up the work again, endeavoured to follow, as far as practicable, along the same general lines. The abandonment of the Census Office at the completion of each decennial census involves the scattering of the experts, chiefs of divisions, trained in the handling of great masses of statistics, thereby losing the benefit of proved and tested methods, of carefully determined principles, of comparisons and analysis, which to my mind are the prime essentials in determining the value of Governmental statistics.

It is true, as I have said, the threads may be gathered together again; but each decennial census office is a law unto itself. However much it may respect the traditions of its predecessors, it is at liberty to ignore them, revise them, to destroy them, and it is certain to more or less confuse them. While there may be little danger when the chief of the census is imbued with the scientific spirit, and informed as to the practical uses of statistics, yet in the nature of things the failure to preserve complete records, and the setting of strange hands to work *ab initio*, must be recognised as out of harmony with the exact science which the gathering and study of statistics has become. The danger and the disadvantage of this part of our system of census taking will, in my opinion, increase as the country grows, and the decennial burden its growth imposes upon the Census Office becomes more crushing; and there will come a time when this system, yoked to the constantly increasing scope and number of schedules demanded, will break down of its own weight.

Avoiding as far as possible detail, I shall now call your attention to the schedule as it was finally adopted for the Eleventh Census. As this is a matter of fundamental importance, you may feel assured it was not adopted without serious consideration by the statisticians directly or indirectly interested in it. I herewith submit a copy of our schedule:—

FORM OF SCHEDULE USED BY ENUMERATORS FOR TAKING THE ELEVENTH CENSUS (size of Schedule $13\frac{1}{2} \times 11\frac{1}{2}$ in.).

FAMILY SCHEDULE—1 TO 10 PERSONS.

(Front.)

Eleventh Census of the United States.

Supervisor's district No. ———.

Enumeration district No. ———.

SCHEDULE No. 1.

POPULATION AND SOCIAL STATISTICS.

Name of city, town, township, precinct, district, beat, or other } ———; County: ———; State: ———
minor civil division.

Street and No.: ———; Ward: ———; Name of Institution: ———

Enumerated by me on the ——— day of June, 1890.

————— Enumerator.

A.—Number of dwelling house in the order of visitation.	B.—Number of families in this dwelling house.	C.—Number of persons in this dwelling house.	D.—Number of family in the order of visitation.	E.—Number of persons in this family.
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INQUIRIES.		1	2	3	4	5
1	Christian name in full and initial of middle name.					
	Surname.					
2	Whether a soldier, sailor, or marine during the civil war (U. S. or Conf.), or widow of such person.					
3	Relationship to head of family.					
4	Whether white, black, mulatto, quadroon, octoroon, Chinese, Japanese, or Indian.					
5	Sex.					
6	Age at nearest birthday. If under one year, give age in months.					
7	Whether single, married, widowed, or divorced.					
8	Whether married during the census year (June 1, 1889, to May 31, 1890).					
9	Mother of how many children and number of these children living.					
10	Place of birth.					
11	Place of birth of father.					
12	Place of birth of mother.					
13	Number of years in the United States.					
14	Whether naturalized.					
15	Whether naturalization papers have been taken out.					
16	Profession, trade, or occupation.					
17	Months unemployed during the census year (June 1, 1889, to May 31, 1890.)					
18	Attendance at school (in months) during the census year (June 1, 1889, to May 31, 1890).					
19	Able to read.					
20	Able to write.					
21	Able to speak English. If not, the language or dialect spoken.					
22	Whether suffering from acute or chronic disease, with name of disease and length of time afflicted.					
23	Whether defective in mind, sight, hearing, or speech, or whether crippled, maimed, or deformed, with name of defect.					
24	Whether a prisoner, convict, homeless child, or pauper.					
25	Supplemental schedule and page.					

TO ENUMERATORS: See inquiries numbered 26 to 30, inclusive, on the second page of this schedule. These inquiries must be made concerning each family and each farm visited.

Back.)

SCHEDULE No. 1.—POPULATION AND SOCIAL STATISTICS.

INQUIRIES.		6	7	8	9	10
1	Christian name in full and initial of middle name.					
	Surname.					
2	Whether a soldier, sailor, or marine during the civil war (U. S. or Conf.), or widow of such person.					
3	Relationship to head of family.					
4	Whether white, black, mulatto, quadroon, octoroon, Chinese, Japanese, or Indian.					
5	Sex.					
6	Age at nearest birthday. If under one year, give age in months.					
7	Whether single, married, widowed, or divorced.					
8	Whether married during the census year (June 1, 1889, to May 31, 1890).					
9	Mother of how many children and number of these children living.					
10	Place of birth.					
11	Place of birth of father.					
12	Place of birth of mother.					
13	Number of years in the United States.					
14	Whether naturalized.					
15	Whether naturalization papers have been taken out.					
16	Profession, trade, or occupation.					
17	Months unemployed during the census year (June 1, 1889, to May 31, 1890).					
18	Attendance at school (in months) during the census year (June 1, 1889, to May 31, 1890).					
19	Able to read.					
20	Able to write.					
21	Able to speak English. If not, the language or dialect spoken.					
22	Whether suffering from acute or chronic disease, with name of disease and length of time afflicted.					
23	Whether defective in mind, sight, hearing, or speech, or whether crippled, maimed, or deformed, with name of defect.					
24	Whether a prisoner, convict, homeless child, or pauper.					
25	Supplemental schedule and page.					
26	Is the home you live in hired, or is it owned by the head or by a member of the family?					
27	If owned by head or member of family, is the home free from mortgage incumbrance?					
28	If the head of family is a farmer, is the farm which he cultivates hired, or is it owned by him or by a member of his family?					
29	If owned by head or member of family, is the farm free from mortgage incumbrance?					
30	If the home or farm is owned by head or member of family, and mortgaged, give the post office address of owner.					

To ENUMERATORS: The inquiries numbered 26 to 30, inclusive, must be made concerning each family and each farm.

Compared with the householders' form or schedule used by your census authorities for England and Wales (a copy of the questions in which I also present as part of this paper¹), it seems a formidable document. It is doubtful if you could ever in England induce your householders to fill such a schedule up and have it ready on a given day.

When I tell you that each enumerator, besides this schedule, was armed with half-a-score special supplementary schedules, which, under certain circumstances, would have to be filled out, you will appreciate how impossible your simpler and more direct system would be with us. Take this schedule for instance. If the person reported he was a soldier, the enumerator must obtain certain additional facts called for by the law in relation to veterans of the civil war. If he happened to be a farmer, the agricultural schedule must be filled out. If a manufacturer, and the locality was not withdrawn from the enumerator (I will explain this further along, as you will see it has an important bearing on the conclusions), a special schedule must be filled out. If the person was defective in mind, sight, hearing, or speech, additional facts on a supplementary schedule. If his morals only were defective, and he was a prisoner, convict, homeless child or pauper, he likewise becomes an object

¹ Questions put in the English Schedule (an exact copy of the schedule is given in the *Journal* for June, 1894, opposite p. 358):—

1. NAME and SURNAME.—*No Persons ABSENT on the Night of Sunday, April 5th, to be entered here; EXCEPT those who may be TRAVELLING or out at WORK during that night (and are not elsewhere returned), and who RETURN HOME ON MONDAY, APRIL 6th.* Write after the Name of the Head of the Family, the Names of his Wife, Children, and other Relatives; then Visitors, Boarders, and Servants.

2. RELATION to Head of Family.—State whether Head, or Wife, Son, Daughter, or other Relative, Visitor, Boarder, or Servant.

3. CONDITION as to Marriage.—Write either "*Married*," "*Widower*," "*Widow*," or "*Single*," opposite the Names of all Persons, except Young Children.

4. SEX.—Write "*M*" opposite Males, and "*F*" opposite Females.

5. AGE Last Birthday.—For *Infants under One Year*, state the Age in Months, writing "*Under 1 Month*," "*1 Month*," "*2 Months*," &c.

6. PROFESSION or OCCUPATION.—*Before filling up Columns 6, 7, 8, and 9, you are requested to read carefully the Special Instructions printed on the other side.* 7. Employer. 8. Employed. 9. Neither Employer, nor Employed, but working on own account.

10. WHERE BORN.—Opposite the Names of those born in ENGLAND and WALES, write the COUNTY, and TOWN or PARISH. If born in SCOTLAND, IRELAND, the BRITISH COLONIES or the EAST INDIES, state the *Country or Colony*. If BORN IN FOREIGN PARTS, write the particular *State or Country*; and if also a BRITISH SUBJECT, add "*British Subject*," or "*Naturalized British Subject*" as the case may be.

11. If (1) Deaf and Dumb, (2) Blind, (3) Lunatic, Imbecile, or Idiot.—Write the precise Infirmary, if any, opposite the name of the Person; and if the Infirmary dates from childhood, add "*from Childhood*." Do not use such a general term as "*Afflicted*" or "*Infirm*."

for a special schedule, while if his only delinquency was a mortgage on his home, his full post office address was taken down with great care. For each of the extra or special schedules the enumerator was paid. If a man happened to be an old soldier, blind, a cripple, and a farmer, he at once became an object of more than ordinary importance to the enumerator, and a citizen with whom he could profitably afford to spend half-an-hour, or even an hour, if the man's family was large, and some of the children weak-minded or deformed. Thus burdened with a heavy population schedule, handicapped by numerous special and supplemental schedules, and with a somewhat formidable book of instructions, the American census enumerator undoubtedly did as well as he could under the circumstances. At the best he was the average man temporarily out of work, or at least willing to undertake rather a disagreeable job for small pay; at the worst he was a ne'er-do-well, anxious to get something out of the Government, and give in return as little as possible. I can safely say that if the census law had not made it a penal offence to accept the place of enumerator and then resign unless incapacitated by illness, about one quarter would have thrown up the job the day they received the book of instructions, while others would have fallen fainting by the way side long before the district had been properly canvassed. All things considered, however, the 45,000 enumerators of the Eleventh United States Census were probably as good a body of men as it was possible to select under the system which called them into existence. A work of this kind takes considerable time, and the district divisions were based on the population as returned by the preceding census, or intervening State census when available, so that an enumerator could finish the work within two weeks in urban places, and within one month in rural districts. It is easy to anticipate your criticisms of this system, but it is doubtful if under our conditions, and with the increasing demands of Congress for statistical data on every conceivable subject, another plan could be made to work.

If I remember aright, I was informed when last in London that in England and Wales you employed as many enumerators as I did for the United States, and that, including the Irish Constabulary, the number exceeded the aggregate number employed by us. To cover the United States from the standpoint of area as you cover England, it would take 400,000 enumerators. That your population work is more accurate than our own I have no doubt. Duplication must be more frequent with us than with you, and, on the other hand, the tendency of the morally defective enumerator to skim the cream off his district and let the rest go must be greater with us than

with you. We are therefore obliged to be contented with the optimistic theory that errors of addition about balance errors of omission, and thus lessen the percentage of error. In some districts, even under our system, an enumerator ought, if half way capable and honest, to make absolutely accurate returns. In others, such for example as New York, where we are obliged to employ every kind of interpreter—and print some of our schedules, as in San Francisco, in Chinese—even a conscientious man might be forgiven for a small percentage of error. In criticising the United States Census, it should be borne in mind that here we find the widest range of humanity, of climate, of endeavour. From huts of mud and surroundings little better than those of the primitive age of man, to dwellings of oriental splendour and princely magnificence; from the simplest and crudest operations in fishing, mining, procuring food supplies and furs, to the most intricate operations aided by invention, electricity, and the greatest human ingenuity; from conditions barbaric to conditions typical of the highest civilisation. To decide the avenues by which these millions shall be reached, the manner this continent shall be traversed, the best methods to be employed, and the information to be sought, are questions which undoubtedly interest the members of the first statistical society of the world.

In referring to the schedule relating to manufactures, I used the expression “if the locality was not withdrawn from the “enumerator.” This brings us to another phase of the subject under consideration, namely, the necessity of relieving the enumerator in every possible way. This could be done in two ways: First by the appointment of special agents in given localities, or by sending agents from Washington to certain localities for the purpose of gathering material. Secondly, by correspondence direct from the Office at Washington. This method was adopted in 1880 by General Walker, and its success encouraged me to experiment with it on a much larger scale, with results which it is safe to say are even more satisfactory than those attained by similar methods in 1880. In every case possible the enumerator's work was cut down, and the work of the special agent enlarged. With the exception of the four last questions on the population schedule, the elaborate inquiry into the individual mortgage indebtedness of the nation was conducted precisely as a private individual would have gone about the work. In the department of manufactures, all manufacturing places of any size were taken out of the hands of the regular enumerator, and a special agent appointed at a per diem pay to do the work. By this method we could generally secure the service of a superior man; in many cases, in the smaller towns, the Secretary of the Board of Trade or Chamber of Com-

merce, who would take local pride in the work. In all the important branches of manufacturing, such as iron and steel, the textile trades, chemical, timber and saw mills, coke and glass, experts were called in, and a system adopted almost identical with the idea set forth by Lord Farrer two weeks ago. As a result we have some reports that will be of permanent value to statistical science, both at home and abroad. With the exception of illiteracy, the educational work was thus treated. The inquiry relating to the various religious bodies in the United States is one of the most complete examples of the combination of individual and Governmental work. Mines and mining, fish and fisheries, transportation, insurance, Indians, Alaska, valuation, taxation, public expenditure and indebtedness were all taken absolutely out of the hands of the enumerators, and brought to a successful conclusion in the manner described. In fact this is true in relation to vital and social statistics, including statistics of special classes. Having thus disposed of as many inquiries as possible, there still remains the entire population work, a considerable portion of the vital and social statistics, and the bulk of the agricultural work, which cannot be separated from the main schedule, and the field work, which under the present system can only be secured by a house-to-house canvass. No one, I think, can realise the importance of a simple schedule more than I do; no one could have made a more persistent struggle to secure simplicity and brevity. Yet the failure, as I have shown, to realise the ideal was a conspicuous failure. Here is my ideal population schedule:—

1. Name.
2. Whether white, black, Chinese, Japanese, or Indians.
3. Sex.
4. Age at nearest birthday. If under one year, give age in months.
5. Whether single, married, widowed, or divorced.
6. Place of birth.
7. „ of father.
8. „ of mother.
9. Profession, trade, or occupation.
10. Able to read.

With a schedule like this, which contains the really important information, we could take a census in the United States expeditiously and with a fair degree of exactitude. For my part I would not hesitate to relegate all the other work, including agriculture, to the special agent and expert. If the Census Office was permanent this could easily be done. Some branches

of inquiry, such as the financial budgets of our minor civil divisions, could be carried on annually at a small expense. The information is furnished by the local officers free, and the Office would merely have to do the tabulation. A permanent census would also improve our vital statistics, which includes the variations of the life of the people as affected by births, marriages, and deaths, which must always be considered in relation to the living population by colour, race, and the special tendencies to disease and deaths in different localities. Under our present system we have less accurate and valuable data than almost any other civilized country. This is owing to the fact that it is not possible to obtain a complete record of the number of deaths and births occurring in a community unless that information is noted at the time or very near the time of the occurrence of the death or birth. Outside of the New England States, New York, New Jersey, and about half the counties in Alabama, we have no proper registration laws, except of course in nearly all the large cities. Practically we have no complete knowledge of the number of deaths that occur in far the greater part of the United States. The theory that the enumerator can obtain this information is of course absurd. They ask in each family, "Who of this family has died during the last year, and what was the cause of death, and the sex, age, and so on of the descendant?" They do not get the total number of deaths within anywhere from 30 to 40 per cent. Sometimes the family has been broken up by the death of the father or bread winner. Sometimes deaths are forgotten. In the tenement houses of large cities the number of deaths reported to the enumerators would not be one-half of the number actually occurring. Still that is the best we can do. We cannot compare the number of deaths in Kentucky, for example, with the number of people in that State, and compare the result with a similar ratio calculated for Massachusetts. It would show that the death-rate in Kentucky was much less than that of Massachusetts, simply because not more than half of the number of deaths in Kentucky had been reported. This from the volume on Vital Statistics for 1890 tells the story:—

Character of Returns.	Population.	Deaths.	Death-Rate.
Registration record	21,093,320	427,538	20·27
Enumerators' returns (re- mainder of the country) }	41,528,930	447,983	10·79

We can, however, obtain records of a large number of deaths from the enumerators—about 450,000 in the course of a year—

and from these we can ascertain what the relative proportion of deaths from various causes in different parts of the country is to the total number of deaths reported. We can, for example, ascertain very interesting facts relative to the prevalence of consumption, typhoid fever, cancer, &c., but we do not get the facts in relation to the number of population. With us you will readily see that a continuous registration of births, deaths, and marriages must be a State matter. The National Government can act as tabulator and publisher. One of the most important things for a permanent census would be to follow up this work until all States adopted registration laws. To-day the personality of Dr. Billings has alone kept us from disgrace in this important branch of statistical work. He has undoubtedly turned out excellent work in certain directions. With the right material it would have been all that could be desired.

About twenty-five out of our half-hundred States and territories take inter-decennial censuses; some of the laws provide for respectable enumerations, others do not. So far as I have had influence I have endeavoured to exert it in favour of a uniform schedule: a schedule, for example, such as the one given above. If all the States can be induced to take an inter-decennial census on a uniform schedule (and this would not be impossible with a permanent census office at Washington to tabulate the returns as a whole), it would indeed be a step in advance. In this connection let me thank Mr. Reginald H. Hooker for the valuable work he has done with a view of unifying and improving the methods of census-taking in the British Dominions. If we could only go a step further, and secure an agreement among the principal European countries and the United States upon an international schedule, a field for comparison of results would be opened which is now closed, because of the different methods adopted to reach practically the same results. May we not hope that the method of tabulation which we are to consider to-night, and which has already been adopted by the United States, Canada, and Austria-Hungary, and is now under the consideration of the Governments of Germany, France, Italy, and Norway, will in a measure prepare the way for this much to be desired end?

This is not the occasion, nor should I under any circumstances care to burden you with a comparison of the methods of tabulation in the Tenth or Eleventh Censuses of the United States. As you know, we adopted what is known as the Hollerith electrical tabulating system. This secured results with great rapidity and accuracy, besides giving opportunity to make a more thorough analysis of the figures. By the use of this system it has become

possible in the present census, for the first time in the history of statistical work, to aggregate from the schedules all the information which appears in any way desirable. Heretofore the amount of such information which could be evolved from the schedules had been limited, especially in the degree of complexity of the tables. It had been possible to obtain related statistics in tabular form only to a limited extent, but with the machines the most complicated tables can be produced at no more expense than simpler ones. Mr. Hollerith is present, and will himself briefly explain the working of this counting system; it is not necessary for me to more than refer to it in passing. For the benefit of those specially interested in methods of tabulation, I will submit as an appendix to this address a concise statement in parallel columns which shows the greater detail secured in 1890 over 1880 by the method adopted for the Eleventh Census.

Having thus dilated at, I am afraid, too great a length upon the hot water, the sugar, and the lemon, I have but little time, and fear you will have but little patience left to hear a few words about the more vital part of our subject. The most striking and unique results of the Eleventh Census may be thus summarized: A sharp decline of the birth-rate as a whole, and a distinctly decreasing rate of increase of our negro population. Tendency of our rural population to seek the large centres of industrial activity. An increase in tenant-farming, not so much due to mortgage foreclosure as to the fact that in the middle western States farmers have moved to town, and let their farms to men who will work them. An answer to the question put to me by a Member of your present Cabinet, as to why tenant-farming was increasing in the United States, must come mostly from observation, and observations differ according to the observer and the parts of the country with which he is familiar. As you know, the mortgage division of the Census Office has been particularly well situated, by means of the special agents and enormous correspondence, to get opinions from all parts of the country. These indicate that there is more than one explanation. The farm tenants are tenants because their wealth is not sufficient to buy a farm. If they were not tenants they would be farm labourers working for wages.

One reason why farms are available for tenant proprietorship, as I have said, is that some of the older farmers have accumulated sufficient property to enable them to move to towns, and this they desire to do for the purpose of educating children, and also because they, and especially their wives and children, find town life more agreeable than life on a farm, while it may increase their social standing. This has taken place throughout the entire North, except in the newly settled regions. In these cases the farmers

leave their farms in the hands of their sons, or of persons who have been farm labourers, as tenants.

The result of inquiries in some quarters is that the increase of farm tenancy is the reaction from the cultivation of too large farms. The older farmers find that the large farms make too great a demand upon them after sons have grown to manhood and gone to towns, or else have farms of their own, and if an entire farm is not divided up into several tenancies, a portion of it is placed in the possession of a tenant, while the owner continues to work the other portion himself; but too much stress should not be laid upon this explanation; it is not found, as the preceding explanation is, everywhere. There cannot be much of this, because the average farm has increased from 134 to 137 acres during the last ten years.

There is a migration of farmers' sons, too, from farm to town. Education is spoiling them for farm life, and they prefer the more agreeable, exciting and social life of the town, even with small returns. People do not go from town to farm. In the movement of population urbanward, the resulting readjustment that must be made with respect to farm proprietorship gives farm tenancy a place which to a great extent might otherwise be filled by the abandonment of farms.

In those parts of the West from which the public lands can be reached without a longer and more expensive journey than a poor cultivator wants to undertake, some increase of farm tenancy is the result of seeking new land. A farmer in Missouri or eastern Kansas, for instance, has left his place in the hands of a tenant for the better portion of a year, while he has been taking up a homestead in western Kansas. He has done this perhaps for speculation, or to get a farm for a son when he shall become of age.

The poorer and less successful agriculturists of the West have sought better farms farther West, in the meantime leaving their old property temporarily in the hands of tenants, to an extent, I believe, that is sufficient to account for a perceptible increase in tenancy in the West.

The South has circumstances peculiar to itself: the negro farm tenant system having been established at the close of the war, and having continued to the present time. Of course the increase in the area of improved agricultural land means an increase of tenancy. During the last ten years this area in the South has increased more than 21,000,000 acres.

It has been claimed that mortgage foreclosures account for the increase of farm tenancy. While it may be admitted that these foreclosures contribute to farm tenancy, there is no evidence that they contribute to its increase. In Illinois, in 1888, the fore-

closures of mortgages on acre tracts were 0·93 of 1 per cent. of the number of mortgages on farms at the beginning of that year. In Minnesota the percentage in 1890 is 1·55; in New Jersey, in 1889, 0·68 of 1 per cent. Those who claim that foreclosures account for the increase of farm tenancy, must assume that the foreclosed farms become and *remain* tenant farms. Mr. Holmes, who had this work in charge for the Census, made inquiries in regard to this in many parts of the North, and the general observation is that foreclosed farms, while in many cases becoming tenant farms, do not remain such. The mortgagee, in the majority of the cases, is not a farmer; he is often a non-resident of the neighbourhood, and even of the State. A tenant farm is not usually a desirable investment in the United States. The owner must live in the neighbourhood so that he can exercise supervision, or the farm is almost certain to deteriorate in value. Consequently a mortgagee after foreclosure, in a majority of cases, must have the strongest incentives to sell the farm. It is not therefore safe to assume that foreclosures contribute very largely to the increase of farm tenancy. It is equally true that there is no considerable number of farms passing into the hands of large proprietorship. In a letter received last week from Mr. Holmes, he says that in all the investigations, now running over five years, he has not been able to find any persons who make a business of farm landlordism, with the exception of the cotton and tobacco planters of the South, and they have not added to the areas of their holdings since the war.

The increase of farm tenancy in the United States is shown in the Table (I) herewith submitted. This exhibit I received from the Census Office last week. The results given by geographical divisions are most instructive as well as interesting, for they enable us to locate the section of the country where farm tenancy shows the greatest percentage of increase.

Our individual mortgage investigation now completed has established some interesting facts which will hereafter be well worth the attention of the Society. Mr. George K. Holmes has already given you an account of how the investigation was conducted, with partial results. Our complete returns are now available, though it is not my intention to detain you with more than a reference to them at this time.

TABLE I.—*Farm Proprietorship, 1880 and 1890, by Geographical Divisions.*

Geographical Divisions.*	Number of				Percentage of			
	Owned Farms, 1880.	Farm Owning Families, 1890.	Hired Farms, 1880.	Farm Hiring Families, 1890.	Owned Farms, 1890.	Farm Owning Families, 1890.	Hired Farms, 1880.	Farm Hiring Families, 1890.†
The United States	2,984,306	3,142,746	1,024,601	1,624,433	74.44	65.92	25.56	34.08
North Atlantic Division	584,847	518,722	111,292	141,685	84.01	78.55	15.99	21.45
South Atlantic Division	411,673	418,461	232,756	354,135	63.88	54.16	36.12	45.84
North Central Division	1,350,225	1,454,542	347,743	524,117	79.52	73.51	20.48	26.49
South Central Division	565,556	613,504	321,092	572,428	63.79	51.73	36.21	48.27
Western Division	72,005	137,517	11,718	32,068	86.00	81.09	14.00	18.91

* North Atlantic Division—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania.

South Atlantic Division—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

North Central Division—Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

South Central Division—Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, Arkansas, Indian Territory. Western Division—Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, California.

† In 1890 the enumerators reported 4,564,641 farms, but in doing this they omitted some tenant farms, as in the case of a tenant farm contiguous to another farm cultivated by the owner of the leased farm, both farms at some time previous having constituted a farm under the cultivation of its owner. The tenant farm has no barns, and, being cultivated on shares, and the crops being stored in the buildings of the farm cultivated by the owner, it was a natural mistake on the part of the owner and enumerator to return the crops as for one farm; thus losing the tenant farm as a separate farm, but not the farm tenant family. The mistake might more easily happen in the cotton region of the South. In the 1880 farm proprietorship statistics the farm and not the family was the statistical unit, and it is probable that the enumerators and farm landlords made relatively the same mistake that was made in 1890. In the whole country in 1890 the enumerators reported 2,025,38 more farm families than farms; upon assuming that these were all tenant families, and subtracting them from the farm families and the farm tenancy of 1890 becomes 31.15 per cent., which is fairly comparable with the percentage of 25.56 for 1880. But the true farm tenancy percentage for 1890 is 34.08, showing a greater apparent increase in farm tenancy than was the fact; yet we must admit that there has been some increase.

The results show a total of 12,690,152 farms and homes. Of this number, 4,767,179 are returned as farms, and 7,922,973 as homes. The total number we find about equally divided between those who own their farms or homes and those who rent them. Here it is :—

	Families Owning.	Families Renting.
Total farms and homes	6,066,392	6,623,760
Farms	3,142,721	1,624,458
Homes	2,923,671	4,999,302

When, however, we compare farm owning and home owning, it is discovered that relatively speaking the farmer is much better off than his brother of the large cities. Of the 4,767,179 farms no less than 3,142,721 are owned, and only 1,624,458 are rented. Of the 7,922,973 homes, however, nearly 5,000,000 are rented and the remainder owned. Thus we are rapidly becoming a nation of house renters and not of home owners.

I recently received the home proprietorship figures for Berlin in 1890: 96·65 per cent. of the families hire their homes. In New York City the percentage is 93·67, but of course New York is peculiarly situated—the “greater New York” should more fairly be taken into consideration. In New York City and the nine counties in New York State and New Jersey that are neighbouring to that city, 83·54 per cent. of the home families are tenants. In New York City and in 19 cities having a population greater than 8,000, and situated in New York State and New Jersey, all of the 19 by interests and situation parts of New York City, the home tenant families are 86·37 per cent. of the entire number of home families. A percentage somewhere between this one and the percentage representing the ten counties is more fairly the percentage to represent the home tenancy in the New York Metropolitan District—say, 85 per cent. Among our large cities Boston comes next, with a tenancy represented by 81·57 per cent.; Brooklyn next, with 81·44 per cent.; Jersey City next, with 81·20 per cent.; and Cincinnati fifth in order, with 80·82 per cent. Among the large cities (100,000 population and over) Rochester has the least home tenancy—namely, 56·02 per cent.; Milwaukee is second, with 57·87 per cent.; Detroit third, with 58·33 per cent.; and St. Paul fourth, with 59·80 per cent.

Selecting from the totals the incumbered homes and incumbered farms only, and giving the values as returned by the owners, we have the following :—

Value of Farms and Homes Occupied by Owners, and Incumbered, and Amount and Percentage of Incumbrance thereon.

	Number of Families owning with Incumbrances.	Value.	Incumbrance.	Percentage of Incumbrance of Value.
Total for the United States	1,696,890	\$ 5,687,298,069	\$ 2,132,949,563	37.50
For farms	886,957	3,054,923,165	1,085,995,960	35.55
„ homes	809,933	2,632,374,904	1,046,953,603	39.77

Here we have an average percentage of debt of $37\frac{1}{2}$ per cent. on the value as declared by the owner.

In the large cities containing populations of over 50,000 there are 2,363,577 homes, of which number I find only 567,740 owned and 1,795,837 rented. Here we have over three-fourths rented, or 76 per cent. of the aggregate homes, and only 24 per cent. owned. Of the 6,066,392 farms and homes reported as owned by the occupants, we find the following distribution of those free of debt and those incumbered:—

	Free.	Incumbered.
Farms	2,255,814	886,909
Homes.....	2,113,740	809,931
Total farms and homes.....	4,369,554	1,696,838

Of owning families the following percentage are free from debt:—

	Free.	Incumbered.
Farms and homes	72	28
Farms	72	28
Homes.....	72	28

This for all families owning. In the large cities, however, a greater proportion of homes are incumbered, nearly 38 per cent., and only 62 per cent. free of debt.

This inquiry was conducted in two ways: The house to house inquiry for the purpose of ascertaining the proportion of farms and homes rented, of farms and homes owned, and the incumbrances thereon. The transcript of all real estate mortgages placed on record for ten years (mortgages must be recorded in the United States) in order to show the drift of such indebtedness,

the existing amount, the rate of interest, the purpose for which contracted, and other facts of importance in a discussion of the debt question. The completed tabulations of existing individual mortgage indebtedness have just been made public, and announce the following results:—

Mortgage indebtedness of the United States, 1890.....	\$6,019,079,985
	(£1,203,815,999)
Number of mortgages represented as in force	4,777,698
Annual interest charge	\$397,442,792
	(£79,488,569)

It is well to bear in mind that this enormous total is not all farm indebtedness. Indeed mortgages on acres seem to form the smaller share in this gloomy and at first apparently overwhelming aggregate indebtedness. The dwellers in our cities and towns seem to have been caught by the mortgage craze or epidemic to an even greater extent than the farmer; look at these two pictures:—

Acres.

Number of mortgages	2,303,061
Amount	\$2,209,148,431
	(£441,829,689)
Annual interest charge	\$162,652,944
	(£32,530,599)

Lots.

Number of mortgages	2,474,637
Amount	\$3,810,531,554
	(£762,106,397)
Annual interest charge	\$234,789,848
	(£46,957,989)

Of the amount of mortgage debt placed on real estate in the United States in 1880, 48·19 per cent. was on acres and 51·81 per cent. on lots. Of the amount in 1889, 33·42 per cent. was placed on acres and 66·58 per cent. on lots; showing the increasing importance of mortgages on lots.

Although so much has been said about the mortgage debt west of the Mississippi river, yet, as a matter of fact, the principal portion of the mortgage debt of the United States is in the six States of Massachusetts, New York, New Jersey, Pennsylvania, Ohio, and Illinois. These States owe 57 per cent., or nearly three-fifths of the mortgage debt of the country. These are the great industrial States. In short, the figures show that right along the lines of greatest prosperity and progress, whether it be agricultural, mining, manufacturing, or commercial, there you find the largest amount of debt. It is found that mortgages are responsive

to high real estate values, to business activity, and to the growth of towns and cities. If a map of the United States were to be shaded in accordance with the amount of mortgage debt, the darker portions would be found in such great industrial States as Pennsylvania, Massachusetts, and New York in the east; the new mining and manufacturing regions of Alabama and Tennessee would be the dark spots of the south; Illinois and Ohio would be darker than Indiana in the old west; and Chicago would be black indeed. The reason for this is that mortgages enable men who can make partial payment for real estate purchases, to branch out into undertakings that would otherwise be beyond their reach.

One result of this inquiry, which is made public for the first time to-day, and which deserves especial attention, is the increase of farm value compared with farm incumbrance, by States and territories. The table in full will be found in the Appendix, and is well worth a careful examination at your hands. The summary for the United States is as follows:—

	1880.	1890.
Average value of each farm acre.....	\$ 19·02	\$ 21·31
Increase of average value of each farm acre, 1880 } to 1890	} \$2.29	

Percentage of incumbrance of value, 1890	35·55
Average rate per cent. of interest as shown by }	
inquiry for 1890	7·07
Interest charge, 1880 to 1890	\$4·78
Percentage of increase of value of interest charge	47·91
incumbrance and }	
interest charge combined	19·84

Here then is an element of mortgage indebtedness which cannot in fairness be overlooked. The total value of all farms in each State and territory has been taken, and the number divided by the number of acres in the farms, improved and unimproved, and this both for 1880 and 1890; the results are in the first two columns of the table in the Appendix. One column has been subtracted from the other to make Col. 3. Col. 4 contains percentages which represent the ratio of farm incumbrance to the value of incumbered farms as determined by the farm and home investigation. Each of these percentages has been multiplied into the first column, which, as before said, represents the average value of each farm acre in 1880. Now suppose that a farmer in 1880 placed this incumbrance upon an average acre of his land and paid

the rate of interest established by the farm and home investigation, and shown in the sixth column: the rate was not materially higher in 1880 than in 1890, because the rate of interest on acre tracts fell only one-tenth of one in the percentage. The seventh column shows the interest upon the mortgage on the average acre for ten years. Ten years is taken because we are compelled to adopt that period in order to get the increase or decrease of acre values. In the United States the increase in the value of the average farm acre during the ten years was enough to offset 47·91 per cent. of the interest during the same time, or enough to offset 19·84 per cent. of both principal and interest—that is, for the United States. Notice the geographical divisions at the end of the table, and then the more heavily mortgaged States. Take Kansas for instance. The increase in the value of the average farm acre in Kansas was two and one-third times the interest charge, and was a little more than enough to offset the entire principal of the debt and interest. Nebraska is even more conspicuous in this respect.

The average value given in the first two columns includes improvements, and of course the column for 1890 includes improvements made since 1880. This may at first be regarded as considerably qualifying the conclusions reached in the last two columns, and yet the fact in regard to these improvements is that they are on the farms and are owned by the farmers, and the farmers have them to offset against interest and debt.

Another important conclusion that this investigation has established is the voluntary character of mortgage indebtedness. It does not represent a loss of wealth by debtors which they are replacing by borrowing. From three-fourths to nine-tenths of the debt has been incurred in the purchase of real estate and to pay for improvements, and if to these are added business purposes, and the purchase of the more enduring kinds of personal property, almost the entire amount of the real estate mortgage debt of the United States is accounted for. The farmers of the West mortgaged their farms in order that they might buy them, erect buildings, and procure stock and machines with which to pursue their occupations. In this way there has been strengthened a demand for farm lands, and mortgages have been instrumental in preventing the growth of great agricultural holdings by landlords.

There are, of course, other striking results, which can hardly be hinted at in a paper of this length. Our budget of wealth shows a decided increase, as you may gather from the following, showing the estimated valuation of property for 1890:—

	\$
Real estate, with improvements thereon	39,544,544,333
Live stock on farms and ranges, farm implements and machinery	2,703,015,040
Mines and quarries, including product on hand	1,291,291,579
Gold and silver coin and bullion	1,158,774,948
Machinery of mills and product on hand, raw and manufactured	3,058,593,441
Railroads and equipments, including \$283,898,519 street railroads	8,685,407,323
Telegraphs, telephones, shipping, and canals	701,755,712
Miscellaneous	7,893,708,821
Total	<u>65,037,091,197</u>

Public debt of all kinds, national, State, municipal, county, and school districts, has declined in the ten years, and in round figures we show a reduction of about 200,000,000. Happy as this should make us, the alloy comes, as Mr. Holmes suggested in his valuable paper, in the concentration of these accumulations in a comparatively few hands. Here we have one of the dangers of the Republic which the most hopeful among us cannot look upon without alarm. Manufacturing, railways, internal commerce have almost doubled during the decade, while agriculture has fairly held its own in point of increase of product, though, of course, not in point of profitable returns. Illiteracy, you will be glad to learn, has decreased, and our educational statistics show that the coloured people of the South are showing remarkable eagerness to take advantage of such educational opportunities as come within their range. In this they excel the white population. I cannot imagine anything more satisfactory than the progress of education during the decade ended in 1890. While, as I have shown, tenancy seems to increase, the actual number of dwelling houses has increased relatively at a greater rate than the population. The first successful attempt to show the advance of the religious bodies of the country gives us a six fold increase since 1850 in point of value of property, while the number of churches has increased three fold. It is fair to assume that in spite of the many dangers ahead we are not too optimistic in hoping that the school, the church, and the home are still potent forces for good. While there is much in the air that is disturbing, discouraging, and in some directions even dismaying, these elements of our Christian civilisation still continue to exert a guiding influence that must be the safeguard of a Government of the people for the people.

APPENDIX 1.

Comparison of the Methods of Tabulation in the Tenth and Eleventh Censuses of the United States.

In the Tenth and Eleventh Censuses of the United States, taken in 1880 and 1890, the inquiries regarding population were practically the same concerning each person enumerated for certain subjects, viz. :—

1. Christian name and surname.
2. Relationship to head of family.
3. Colour (white, black, mulatto, Chinese, Japanese, or Indian).
4. Sex (male or female).
5. Age (at nearest birthday).
6. Conjugal condition (single, married, widowed, or divorced, also whether married during census year).
7. Place of birth (state or territory if native born, and country if foreign born).
8. Place of birth of father.
9. " " mother.
10. Profession, trade, or occupation.
11. Months unemployed during census year.
12. Attendance at school during census year.
13. Ability to read (for persons 10 years and upwards).
14. " write " " "

In addition information was obtained at each census concerning the whole number of families and dwelling houses (or places of abode).

In 1890, however, certain additional inquiries were added to the population schedule, as follows :—

1. Whether a soldier, sailor or marine during the civil war (United States or Confederate), or widow of such person.
2. Mother of how many children, and number of these children living (for all married, widowed and divorced women).
3. Number of years in the United States (for all foreign born adult males).
4. Whether naturalized (for all foreign born adult males).
5. Whether naturalization papers have been taken out (for all foreign born adult males).
6. Ability to speak English (for all persons 10 years and upwards).
7. Whether home lived in was hired, or owned by the head or by a member of the family.

8. If owned by head or member of family, whether the home was free from mortgage incumbrance.
9. If head of family was a farmer, whether the farm which he cultivated was hired, or owned by him or by a member of his family.
10. If owned by head or member of family, whether the farm was free from mortgage incumbrance.

In 1890, also, a further subdivision was required by the law concerning negroes of mixed blood as to the number of mulattoes, quadroons, and octoroons.

The tabulated results of the Tenth Census (1880) were all obtained by hand-tallies, a mechanical device being used simply for holding the tally-sheet in place and as a guide to the eye in finding the proper place for making the entry thereon. In the Eleventh Census (1890), however, the Hollerith Electric Tabulating system was adopted, by means of which the information concerning each individual was transferred by punching to a separate card, and the several tabulations necessary to comprehend the information punched thereon obtained by the use of electrical machines, on which the cards were successively sorted and counted.

The methods of tabulation used in 1880 and 1890 can be readily contrasted for such subjects of tabulation as were common to both censuses, so as to show very clearly the greater detail obtained in 1890 as compared with 1880, as well as to illustrate in a graphic manner the increased complexity of results obtained by a single handling of the cards through the use of the electrical machines as compared with the comparatively simple results obtained by the use of hand-tally methods.

Population Distributed according to Dwellings and Families.

ELEVENTH CENSUS (1890).	TENTH CENSUS (1880).
The first count of the returns in 1890 gave, in addition to the aggregate population for each civil division separately enumerated, the total number of dwellings and families, the number of persons to a dwelling and to a family in detail, as 1, 2, 3, or 4 persons, to the highest number reported, the average number of persons to a dwelling and to a family, besides a special classification of the number of families to a dwelling; this information regarding dwellings and families being of the highest importance in determining relative conditions of the people living in urban and rural districts, particularly as regards the great cities where the population is very much congested.	The aggregate population in 1880 was ascertained by counting in duplicate the number of entries on the population schedules for each given district. As regards dwellings and families a simple count was made as to the total number of dwellings and families in each district, and the average number of persons to a dwelling and to a family in each case.

Population classified by Sex, General Nativity, Colour, and Age Groups.

ELEVENTH CENSUS (1890).

By a single handling of the punched cards there were obtained in 1890 a primary division of the population according to native white of native parentage, native white of foreign parentage, foreign white, native coloured, and foreign coloured, subdivided according to sex and by certain age periods. For all adult males of foreign birth a further classification was obtained as regards the number who had been naturalised, who had taken out naturalisation papers, or who were aliens, aliens being also classified as to whether they could speak the English language or not. In the same way, the native and foreign coloured were subdivided as to the number of blacks, mulattoes, quadroons, octoroons, Chinese, Japanese, and civilised Indians. For all householders, also, a separate classification was made as to the number who hired or owned their farms, and if owned, the number of homes or farms that were free or mortgaged. The results of this count comprehended, therefore, not only the simple statements as to the number of males and females, the number of native born and foreign born, the number of whites, negroes of pure or mixed blood, Chinese, Japanese, and civilised Indians, but the various combinations of facts relating to sex, colour, and general nativity for each of the primary divisions of the population as regards age, including children less than 1 year of age and children under 5 years of age, of special importance for purposes of vital statistics; the number of children between 5 and 20 years of age, or the ages covering most school attendants; the number of males between the ages of 18 and 44 years, or the militia ages; the number of males 21 years of age and upwards, representing the potential voting ages, and the number of persons 45 years of age and upwards.

TENTH CENSUS (1880).

In 1880 the population was tallied according to white and coloured, subdivided as to sex and whether native or foreign born, the number of Chinese, Japanese, and civilised Indians being separately noted where such occurred. The classification of the population in 1880 according to school, militia, and voting ages was derived from a separate count according to ages in detail, referred to later on. No information was obtained in 1880 regarding either the citizenship of foreign born males of voting age or the ownership of homes and farms.

Population classified according to Conjugal Condition.

ELEVENTH CENSUS (1890).

The tabulation in 1890 of the number of single, married, widowed, and divorced comprehended for each of the five divisions of the population already referred to, a subdivision according to sex, 10 age periods, and 14 birthplaces of mothers. The subdivision into age periods comprehended persons less than 15 years, 15 to 19 years, 20 to 24 years, 25 to 29 years, 30 to 34 years, 35 to 44 years, 45 to 54 years, 55 to 64 years, 65 years and upwards, and age unknown, while the birthplaces of mothers were specified for the following named countries: Ireland, Germany, England and Wales, Canada and Newfoundland, Sweden, Norway, and Denmark, Scotland, Bohemia, France, Hungary, Italy, Russia, other countries, United States, unknown.

TENTH CENSUS (1880).

Information obtained in 1880, but not compiled.

Population distributed according to Place of Birth.

The native born population in 1890 was distributed, without regard to sex, according to the State or territory where born, or more than 50 places of birth in all, for each of the three elements into which it was subdivided, viz., native white of native parentage, native white of foreign parentage, and native coloured, a further subdivision according to sex and quinquennial age periods being made for those born and living in the State where enumerated.

The foreign born population in 1890 was distributed, without regard to sex, according to country where born, or 42 places of birth in all, for each of its elements, viz., foreign white and foreign coloured. The alien element of the population—that is, foreign born adult males who had not become naturalised—were also separately counted according to country of birth in detail, and, in addition, according to the number of years they had been in the United States.

The birthplace of persons residing in the United States in 1880 was tallied for the native white and native coloured according to State or territory of birth, or about 50 in all; and for the foreign born, in practically the same detail regarding country of birth as in 1890. As already stated, no information was obtained in 1880 as to the citizenship of foreign born males of voting age.

Population Classified by Ages (in detail), Parentage, Illiteracy and School Attendance, Ability to Speak English, &c.

ELEVENTH CENSUS (1890).

By the next tabulation of the punched cards there were obtained in 1890 for each of the primary divisions of the population, first, a classification by sex according to single years of age from one year to the highest age reported, and for those less than one year of age by periods of months; second, a classification, without regard to sex, according to native or foreign parentage, specifying for persons of foreign parentage the number having either one or both parents born in Ireland, Germany, England, Scotland, Wales, Canada (English), Canada (French), Sweden, Norway, Denmark, Bohemia, France, Hungary, Italy, Russia, and other countries; third, a further classification of the birthplaces of mothers according to quinquennial age periods, for vital statistics purposes; fourth, a classification by sex and quinquennial age periods for all persons 10 years of age and upwards, according to whether they were able to read and write, and whether they were able to speak English or not, and for all persons of school age according to months of school attendance; fifth, a classification of the surviving veterans of the civil war, both United States and Confederate, and the widows of such as have died, according to quinquennial age periods.

TENTH CENSUS (1880).

In 1880 similar information was obtained by separate tallies, as follows: First, ages were tabulated by sex for the native white, foreign white, and coloured, according to single years of age, and from this tally were obtained the various presentations regarding age, race, and sex; second, foreign percentage was tallied for a little more than one-half of the total population in 1880, according to whether the person was native or foreign born, and whether one or both parents were of either of the following nationality groups; United States, Ireland, Germany, Great Britain, Scandinavia, British America, and other countries, the ratios derived therefrom being applied to the total population of the United States to obtain similar results for the whole country; third, the number of illiterate persons 10 years of age and upwards, were tallied for the native white, foreign white, and coloured, according to sex, and for the total white and coloured according to three age periods, viz., 10—14 years, 15—20 years, and 21 years and upwards; while the number of pupils attending school during the census year was tallied according to sex, and whether white or coloured. No information was obtained in 1880 as to language spoken or concerning surviving veterans of the late war.

Population Classified according to Occupations.

The occupations of the people, as returned by the census enumerators in 1890, have been tabulated in the main in accordance with the classification used in 1880, modified to a certain extent to meet the requirements of the present census. The tabulated results in 1890 show the number of persons engaged in each remunerative occupation, subdivided by sex and whether

In 1880 each specified occupation was tallied according to sex and three age periods, namely, 10 to 15 years, 16 to 59 years, and 60 years and upwards. For the foreign born, also, a separate statement was made regarding nationality, as follows: Ireland, Germany, Great Britain, Scandinavia, British America, and other countries. No separation regarding occupations in

Population Classified according to Occupations—Contd.

ELEVENTH CENSUS (1890),

native white of native parents, native white of foreign parents, foreign white, or coloured, persons of negro descent being separately distinguished from all other coloured, that is, Chinese, Japanese, and civilized Indians. Regarding each of these elements a further subdivision has been made for each given occupation according to conjugal condition, months unemployed during census year, ability to read and write, ability to speak English, ownership of homes and farms, and whether veterans of the late war, United States or Confederate, or widows of such as have died, and also for ten age groups, as follows: 10 to 14 years, 15 to 19 years, 20 to 24 years, 25 to 34 years, 35 to 44 years, 45 to 54 years, 55 to 59 years, 60 to 64 years, 65 years and upwards, and unknown. In addition, a separate classification according to fourteen birthplaces of mothers has been made for the native white of foreign parents and the foreign white, besides a further subdivision of the foreign born population according to fourteen principal countries of birth, and for foreign born males of voting age a still further subdivision according to citizenship, that is, whether naturalized or not, the alien element being also classified according to length of residence in the United States.

TENTH CENSUS (1880).

1880 was made as to colour and general nativity, number of months unemployed, illiteracy, or conjugal condition, although this information was returned on the population schedule at that census.

Upon the completion of the occupation count in 1890, the punched cards have been so sorted as to readily furnish, if desired, much additional and highly complicated data regarding the illiterate, non-English speaking elements of the population, subdivided as to sex, age, nationality, occupation, and citizenship, besides furnishing the basis of a most complete presentation regarding the relative fecundity of women of different nationalities, the necessary data having been obtained in 1890 for the first time in a United States Census, but for both of which the tabulations could not be completed under the present temporary organization of the Census Office.

APPENDIX 2.

Number and Amount of Real Estate Mortgages in Force, 1st January,

States and Territories.	Total.		On Acres.	
	Number.	Amount.	Number.	Amount.
		\$		\$
THE UNITED STATES	4,777,578	6,019,679,985	2,302,941	2,209,148,431
Alabama	35,732	39,027,983	27,424	28,762,387
Alaska	—	—	—	—
Arizona	1,474	2,348,519	715	1,580,301
Arkansas	25,138	14,366,595	17,818	9,051,117
California	112,637	241,050,181	45,127	120,890,877
Colorado	54,600	85,058,793	20,484	30,195,056
Connecticut	57,996	79,921,071	12,311	13,176,736
Delaware	9,641	16,122,696	2,768	5,649,705
District of Columbia.....	23,923	51,986,589	319	2,226,277
Florida	20,681	15,505,119	14,094	10,629,142
Georgia	48,519	27,387,590	34,731	16,969,687
Idaho	3,143	3,167,249	2,506	2,811,130
Illinois.....	297,233	384,299,150	128,986	165,289,112
Indiana	171,420	110,730,643	106,155	74,553,217
Iowa	252,559	199,774,171	171,452	149,457,144
Kansas	298,884	243,146,826	203,306	174,720,071
Kentucky	60,284	45,693,749	34,612	23,779,911
Louisiana	20,372	28,513,909	11,352	15,750,153
Maine	58,851	32,627,208	30,985	14,150,646
Maryland	53,908	64,577,803	21,139	27,828,999
Massachusetts	178,202	323,277,668	33,385	42,441,247
Michigan.....	222,761	150,472,700	144,023	95,753,329
Minnesota	195,580	197,745,989	97,078	75,355,562
Mississippi	30,767	19,075,980	26,186	15,829,914
Missouri	192,028	214,609,772	103,161	101,718,625
Montana	5,937	8,729,907	2,385	5,094,329
Nebraska.....	155,377	132,902,322	107,175	90,506,968
Nevada	1,256	2,194,995	928	1,836,655
New Hampshire.....	25,189	18,968,259	14,557	9,430,540
„ Jersey.....	141,704	232,565,919	25,197	54,025,990
„ Mexico	1,523	6,644,673	567	5,839,416
„ York	579,472	1,607,874,301	156,814	217,813,055
North Carolina	47,404	21,471,428	36,143	14,537,449
„ Dakota	38,767	25,777,480	33,734	22,098,092
Ohio	271,055	259,842,188	119,730	134,107,706
Oklahoma	—	—	—	—
Oregon	22,553	22,928,437	16,250	15,983,361
Pennsylvania	518,165	613,105,802	140,127	121,844,907
Rhode Island	20,999	36,778,243	2,640	5,262,243
South Carolina	27,065	13,780,302	19,900	9,060,351
„ Dakota.....	60,221	36,115,773	50,151	29,356,865
Tennessee	39,470	40,421,396	17,196	16,425,144
Texas	93,877	93,864,178	72,922	75,131,355
Utah	5,788	8,040,829	1,939	2,426,018
Vermont	34,388	27,907,687	22,294	19,439,988
Virginia	34,192	28,691,726	20,123	16,564,282
Washington	29,632	44,078,449	18,449	24,727,245
West Virginia	29,357	19,702,505	20,450	14,517,092
Wisconsin	164,626	121,838,168	111,735	81,535,361
Wyoming	3,028	4,967,065	1,418	3,013,674

APPENDIX 2.

1890, and Number of Acres and Lots Mortgaged by States and Territories.

On Lots.		Number Mortgaged.		States and Territories.
Number.	Amount.	Acres.	Lots.	
2,474,637	\$ 3,810,531,554	273,302,264	4,161,138	THE UNITED STATES
8,308	10,265,596	6,088,489	14,221	Alabama
759	768,218	223,070	—	Alaska
7,320	5,315,478	2,563,762	2,357	Arizona
67,510	120,159,304	11,069,600	16,647	Arkansas
34,116	54,863,737	3,496,112	187,297	California
45,685	66,744,335	440,360	182,617	Colorado
6,873	10,472,991	289,624	40,416	Connecticut
23,604	49,760,312	11,755	7,623	Delaware
6,587	4,875,977	2,329,359	37,020	District of Columbia
13,788	10,417,903	7,769,359	17,366	Florida
637	356,119	359,561	17,049	Georgia
168,247	219,010,038	10,660,987	1,572	Idaho
65,265	36,177,426	6,822,499	286,148	Illinois
81,107	50,317,027	16,307,145	94,239	Indiana
95,578	68,426,755	26,577,522	163,701	Iowa
25,672	21,913,838	3,464,754	265,341	Kansas
9,020	12,763,756	3,686,664	31,422	Kentucky
27,866	18,476,562	4,092,296	18,440	Louisiana
32,769	36,748,804	2,062,325	28,989	Maine
144,817	280,836,421	920,313	41,556	Maryland
78,738	54,719,371	9,669,723	132,683	Massachusetts
98,502	122,390,427	10,209,647	129,752	Michigan
4,581	3,246,066	5,474,740	194,586	Minnesota
88,867	112,891,147	10,159,021	8,384	Mississippi
3,552	3,635,578	564,464	155,441	Missouri
48,202	42,395,354	14,085,290	7,950	Montana
328	358,340	366,039	94,772	Nebraska
10,632	9,537,719	1,151,143	700	Nevada
116,507	178,539,929	1,539,601	10,455	New Hampshire
956	805,257	1,630,725	172,261	„ Jersey
422,658	1,390,061,246	11,372,354	2,542	„ Mexico
11,261	6,933,979	4,886,717	647,386	„ York
5,033	3,679,388	4,387,568	13,297	North Carolina
151,325	125,734,482	7,762,136	10,565	„ Dakota
6,303	6,945,076	2,528,820	210,380	Ohio
378,038	491,260,895	9,206,202	—	Oklahoma
18,359	31,516,000	96,546	15,360	Oregon
7,165	4,719,951	3,713,556	570,395	Pennsylvania
10,070	6,758,908	6,997,823	29,970	Rhode Island
22,274	23,996,252	3,018,045	8,910	South Carolina
20,955	18,732,823	32,192,178	29,526	„ Dakota
3,849	5,614,811	294,319	32,896	Tennessee
12,094	8,467,699	1,667,602	51,598	Texas
14,069	12,127,444	3,487,100	6,111	Utah
11,183	19,351,204	2,739,257	12,242	Vermont
8,907	5,185,413	3,828,199	20,608	Virginia
53,091	40,302,807	10,215,886	31,109	Washington
1,610	1,953,391	822,007	11,754	West Virginia
			91,558	Wisconsin
			3,926	Wyoming

States and Territories.	1	2	3	4	5	6	7	8	9
	Average Value of each Farm Acre. 1880.	Average Value of each Farm Acre. 1890.	Increase of Average Value of each Farm Acre, 1880 to 1890.	Percentage of Incumbrance of Value, 1890.	Supposed Incumbrance per Acre, 1890, at Established Ratio to Value, 1890.	Average Rate of Interest, 1890.	Interest Charge, 1880 to 1890.	Percentage of Increase of Value of Interest Charge.	Percentage of Increase of Value of Incumbrance and Interest Charge.
	\$	\$	\$		\$		\$		
THE UNITED STATES	19'02	21'31	2'29	35'55	6'76	7'07	4'78	47'91	19'84
Alabama	4'19	5'59	1'40	43'77	1'83	8'91	1'63	85'89	40'46
Arizona	8'32	5'57	2'75*	40'55	3'37	12'61	4'25	—*	—*
Arkansas	6'16	7'96	1'80	44'38	2'73	9'35	2'55	70'59	34'09
California	15'79	32'53	16'74	30'32	4'79	8'78	4'21	397'62	186'00
Colorado	21'55	18'49	3'06*	32'39	6'98	9'23	6'44	—*	—*
Connecticut	49'34	42'16	7'18*	40'64	20'05	5'67	11'17	—*	—*
Dakota†	5'89	9'59	3'70	37'58	2'21	9'53	2'11	175'36	85'65
Delaware	33'74	37'50	3'76	44'04	14'86	5'70	8'47	44'39	16'12
District of Columbia	200'18	550'97	350'79	32'78	65'62	6'00	39'37	891'01	334'12
Florida	6'15	19'80	13'65	31'21	1'92	10'72	2'06	662'62	342'96
Georgia	4'30	6'03	1'73	41'89	1'80	8'33	1'50	115'33	52'42
Idaho	8'64	13'39	4'75	30'04	2'60	10'55	2'74	173'36	88'95
Illinois	31'87	41'41	9'54	34'63	11'04	6'92	7'64	124'87	51'07
Indiana	31'11	37'07	5'96	30'30	9'43	6'89	6'50	91'69	37'41
Iowa	22'92	28'13	5'21	33'29	7'63	7'86	5'62	92'70	39'32
Kansas	10'98	18'53	7'55	35'99	3'95	8'15	3'22	234'47	105'30
Kentucky	13'92	16'17	2'25	40'12	5'58	6'68	3'73	60'32	24'17
Louisiana	7'13	8'95	1'82	44'12	3'15	8'06	2'54	71'65	31'99
Maine	15'62	15'95	0'33	36'68	5'73	6'26	3'59	9'19	3'54
Maryland	32'33	35'35	3'02	38'49	12'44	5'79	7'20	41'94	15'38
Massachusetts	43'52	42'54	0'98*	41'88	18'23	5'58	10'17	—*	—*
Michigan	36'15	37'62	1'47	32'38	11'71	7'10	8'31	17'69	7'34
Minnesota	14'45	18'22	3'77	31'61	4'57	8'18	3'74	100'80	45'37
Mississippi	5'86	7'25	1'39	54'44	3'19	9'79	3'12	44'55	22'03
Missouri	13'47	20'33	6'86	32'28	4'35	7'93	3'45	198'84	87'95
Montana	7'97	12'99	5'02	31'69	2'53	10'97	2'84	180'58	94'54
Nebraska	10'65	18'63	7'98	32'39	3'45	8'22	2'78	280'99	126'87
Nevada	10'19	7'43	2'76*	33'13	3'38	9'63	3'25	—*	—*

* Loss of value.

† North and South Dakota combined.

1894.]

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States and Territories.	1 Average Value of each Farm Acre.		3 Increase of Average Value of each Farm Acre, 1880 to 1890.	4 Percentage of Incumbrance of Value, 1890.	5 Supposed Incumbrance per Acre, 1880, at Established Ratio to Value, 1890.	6 Average Rate of Interest, 1890.	7 Interest Charge, 1880 to 1890.	8 Percentage of Increase of Value of Interest Charge.	9 Percentage of Increase of Value of Incumbrance and Interest Charge.
	1880.	1890.							
New Hampshire	20.38	19.13	\$ 1.25*	38.44	\$ 7.83	5.91	\$ 4.63	—*	—*
" Jersey	65.16	59.83	5.33*	49.64	32.35	5.69	18.41	—*	—*
" Mexico	8.74	10.33	1.59	34.22	2.99	10.05	3.00	53.00	26.54
" York	44.41	44.08	0.33*	43.63	19.38	5.66	10.97	—*	—*
North Carolina.....	6.07	8.12	2.05	45.59	2.77	7.95	2.20	93.18	41.25
Ohio	45.97	44.96	1.01*	34.29	15.76	6.68	10.53	—*	—*
Oklahoma	—	—	—	—	—	—	—	—	—
Oregon	13.50	16.76	3.26	29.85	4.03	9.06	3.65	89.32	42.45
Pennsylvania	49.30	50.22	0.92	40.65	20.04	5.43	10.88	8.46	2.98
Rhode Island	50.27	46.61	3.66*	42.59	21.41	5.82	12.46	—*	—*
South Carolina	5.10	7.52	2.42	50.24	2.56	8.57	2.19	110.50	50.95
Tennessee	10.00	12.04	2.04	40.13	4.01	6.21	2.49	81.93	31.38
Texas.....	4.70	7.78	3.08	41.68	1.96	8.38	1.64	187.80	85.56
Utah	21.38	21.46	0.08	24.93	5.33	10.13	5.40	1.48	0.75
Vermont	22.40	18.30	4.10*	41.76	9.35	5.88	5.50	—*	—*
Virginia.....	10.89	13.32	2.43	47.60	5.18	6.06	3.14	77.39	29.21
Washington.....	9.82	19.97	10.15	28.64	2.81	9.87	2.77	366.43	181.90
West Virginia	13.06	14.72	1.66	32.22	4.21	6.19	2.61	63.60	24.34
Wisconsin.....	23.80	28.44	5.14	33.31	7.76	6.64	5.15	99.81	39.81
Wyoming	6.72	7.90	1.18	34.63	2.33	10.92	2.54	46.46	24.23
Recapitulation by Geographical Divisions.									
North Atlantic Division	41.24	40.47	0.77*	42.74	17.63	5.62	9.91	—*	—*
South	24.78	11.34	2.55	40.15	3.53	6.64	2.34	108.97	43.44
North Central Division	7.35	27.55	2.77	33.44	8.29	7.43	6.16	44.97	19.17
South	7.35	9.20	1.85	43.07	3.17	8.05	2.55	72.55	32.34
Western Division.....	14.92	23.16	8.24	30.32	4.52	9.08	4.10	200.98	95.59

* Loss of value.

*The ELECTRICAL TABULATING MACHINE.**By* DR. HERMAN HOLLERITH.

[Read before the Royal Statistical Society, 4th December, 1894.]

WHILE engaged in work in the tenth census, that of 1880, my attention was called by Dr. Billings to the need of some mechanical device for facilitating the compilation of population and similar statistics. This led me to a consideration of the problems involved. I found, for example, that while we had collected the information regarding the conjugal condition of our 50,000,000 inhabitants, we were unable to compile this information even in its simplest form, so that, until the census of 1890, we never even knew the proportion of our population that was single, married, and widowed. Again, while we classed our population as native white, foreign white, and coloured, this was extremely unsatisfactory. For example, of what significance is it to know the number of children under 5 years of age who were native born? To have divided the native born into those of native parentage and those of foreign parentage, would have been practically impossible with the methods of 1880.

To obtain the population classified according to age, sex, and birthplace of mother could not have been considered. Again, it was apparent that if we wished to consider the progress of the negro in regard to illiteracy, we should know the number of illiterates at each age-period. In vital statistics much could be done in combining race, age, conjugal condition, occupation, and cause of death. Almost in every direction could be seen the need for combined or correlated statistics.

These were the considerations which prompted me to take up this problem, the result of which studies, after years of experimental work, are embodied in the apparatus or system which I will now briefly describe.

It must not be considered that this system is still in an experimental stage. Over 100,000,000 punched cards have been counted several times over on these machines, and this has afforded ample opportunity to test its capabilities.

I am glad to be able to say here to-day that in my struggle to secure the adoption of this system in the United States, I often had recourse, with great advantages, to references to and quotations from, the works of your Dr. Farr.

This system of electrical tabulation may perhaps most readily be described as the mechanical equivalent of the well-known

method of compiling statistics by means of individual cards, upon which the characteristics are indicated by writing. As it would be difficult to construct a machine to read such written cards, I prepare cards by punching holes in them, the relative positions of such holes describing the individual. In the United States Census we used cards of $3\frac{1}{4}$ inches by $6\frac{5}{8}$ inches, the surface of which was divided into 288 imaginary spaces $\frac{1}{4}$ inch square. To each of these spaces some particular value or meaning is assigned; a hole in one place meaning a white person, in another a black. Here a hole means a certain age-group, there it gives the exact year in that group. A combination of two holes in another part of the card indicates the occupation of the particular individual. In this way we not only recorded the answers to the twenty-six inquiries of the population schedule, but we also recorded the particular State, county, city, and enumeration-district in which the given person resided. Besides this, a number was stamped on the card, so that by these means any one of the 62,000,000 cards could be readily identified and compared with the original return.

This punching of the card, so far as the individual record is concerned, was done by means of the keyboard punch. The combination of holes representing the enumeration-district (over 40,000 in all), being the same for all the cards of a given district, was most readily punched by means of the gang punch. The punches being set for the given combinations, five or six cards were punched at one operation, the cost of this part of the work being thus relatively insignificant.

Having thus prepared a punched transcript for each individual, we are ready to tabulate them on the electrical machine. This consists primarily of a press or circuit-closing device, the upper and movable portion of which is provided with projecting spring-actuated needles, or points corresponding in number and relative position to the holes which may possibly be punched in the record card. The lower or fixed plate consists of a piece of hard rubber provided with a corresponding number of cups partially filled with mercury, which through suitable wires are connected with the binding posts of the switch board. If a punched card is placed in this bed, and the handle depressed, wherever there is a hole in the card the needle will dip down into the mercury, while at all other points the needles will be pressed back.

In connection with this so-called press counters are used. A counter consists of an electro-magnet, so arranged that each time a circuit is closed through it the armature is actuated so as to register 1. These counters can readily be re set to zero, and will count to 9,999.

If now we imagine such a counter connected to each mercury

cup, it is evident that if all the cards are successively placed in the press, the counters will ultimately give the total number of times any given hole occurred in the cards; or, in other words, a total showing the frequency of the different holes or items.

In practice, however, it is not sufficient to know simply the number of males and females, but we must know, for example, how many males there are at each age-period, as well as how many females at each age-period; or, in other words, we must count age and sex in combination. By a simple use of the well-known electrical relay we can secure this or any other possible combination. It must not be understood that only two items can be combined; in this way any number of items can be combined. We are only limited by the number of counters and relays.

As it would require 800 counters to compile a table of 800 columns, I have recourse to the use of a sorting box. This is simply a box divided into compartments (usually 24), placed by the side of the operator. The lids of these compartments are controlled by electro-magnets operated in exactly the same manner as the electro-magnets of the counters. If these magnets are connected to the mercury cups corresponding to age-groups, for example, and the cards are successively placed in the press, for each card a lid is automatically opened, according to the age of the individual represented by the given card. Each card having been deposited in the compartment opened by it, we have all our cards sorted according to twenty age-groups. If now each of these groups be passed through the machine provided with fifty counters, we obtain a result equivalent to a table of 800 columns.

It must also be noted that these two operations of sorting and counting can be conducted simultaneously, or either one independently of the other.

To show what can be done with such a machine, permit me to call your attention to the first handling of the punched cards of the United States Census. Here we obtained for each of the divisions of the population, *i.e.*, native with native parents, native with foreign parents, foreign white, and coloured, a classification according to sex, and the following age-periods: less than 1 year, 1 to 4, 5 to 9, 10 to 17, 18 to 20, 21 to 44, 45 and over. At the same time we obtained a classification as to homes and farms, whether hired, owned free, or owned mortgaged. For the foreign, in addition to the above, whether a citizen or alien, and whether the person could speak English. For the coloured, a distinction as to Black, Mulatto, Quadroon, Octoroon, Chinese, Japanese, and Indian. This information it must be remembered was obtained for each enumeration district.

I will not weary you with the details of the various operations further than to call your attention to some few points.

We, I believe, pay about 35,000,000*l.* annually in pensions. How long this will continue is of course an interesting question. In case of any further legislation relating to pensions, we will know how many survivors of the late war there are at each age-period, also as regards the age of widows of soldiers. In other words, we now have some data upon which to base our calculations.

For certain classes of occupation, as many as ten distinct and different items were tabulated at one operation of the machine. Thus, for example, we now know the number in each occupation who were born in England, and who had mothers born in England.

It is of the greatest interest to know whether such a machine is accurate. Liability to error is of course always present, but with a properly arranged plan the possibility of an error going undetected is narrowed down to the one operation of punching. If the punched cards are verified, the subsequent operations can be fully checked by mechanical means. Even some of the errors of punching are detected by the electrical machine. If, for example, you forgot to punch whether the given foreign born person is an alien or citizen, the machine will not operate. Again, as this question is applicable only to males over 21 years of age, the machine takes all this into consideration, and does not refuse to count a female or a male under 21 even if citizenship is not punched. Only such errors of punching as are consistent will pass through the machine. I mean, for example, if a card is punched citizen when it should have been alien.

Naturally, in handling over 180 tons of cards as we did in the United States, there is apt to be some confusion. A few carpenters may get among the blacksmiths, or a few Bostonians may get mixed with the New Yorkers. These machines, however, were so connected that if while counting the blacksmiths of New York a carpenter should by accident come into the machine, it would not count. Likewise, if a Boston card came into the press it would be rejected.

Without the slightest delay such an electrical counting machine will read or test before tabulating whether the given person was white, native born, native father, native mother, male, blacksmith, and resident of new York City. If it agree in all these particulars, it would tabulate the person under from six to ten different items, whereas if the description did not tally, or any one of the required facts were not punched, the card would be rejected. An inspection of the card would then show the cause, and if due to an omission, this was supplied by reference to the original schedule.

Thus it is believed that the liability to error is much less, take it all in all, than with the old system of tallying, of ticking, or even the method of sorting and counting the original individual cards, as practised in Germany.

This system also possesses one advantage to which I would like to call your attention. In the case of current work the punched card may contain a pretty elaborate transcript which can be used for compiling the simpler monthly and annual tables, while at the end of say five or ten years there will be accumulated the cards, which will then be ready for an exhaustive tabulation. This would be true in case of registration of births, deaths, and marriages insurance experience, and many similar kinds of statistical work.

Discussion on MR. PORTER'S and DR. HOLLERITH'S Papers.

DR. W. OGLE congratulated Mr. Porter on having brought the gigantic task of the American census to a successful issue. He sympathised with him in his remarks on the reception often given to census results by the public. Those who found the figures tally with their expectations were given to cry out that a census was of little use, for they knew all about it beforehand; while those who found that the figures did not support their theories, attacked the census methods, and sometimes did not hesitate to accuse the census-takers of writing with an animus, and misrepresenting the facts.

He had no intention of comparing the results of the American and English enumerations; that would be an interesting but formidable undertaking. He would simply note that many of the phenomena presented by the population were the same in both countries. Such were the decreasing birth-rate, the decline in the rate of increase, and the migration of the rural population into the towns. These phenomena presented themselves both in America and in England, and indeed in other countries, and the explanation must therefore be sought not in conditions peculiar to ourselves, but in conditions shared by us with foreign States.

The American census differed enormously from the English census in its scope. Our own was limited to the enumeration of the people and houses, with some simple particulars concerning them, such as their age, sex, and occupation. But this was a comparatively insignificant part of the American census, which branched out into multitudinous inquiries, doubtlessly of high interest, but scarcely, as it seemed to him, coming properly under the designation of census work. For example, in the census report of 1881 there was, if he remembered rightly, a whole volume devoted to the habits and natural history of fishes, the

modes of capturing them, and other piscicultural matter. It appeared to him that it was a mistake to combine such inquiries as this with the census proper, that is, with the enumeration of the people. This latter could be carried out in a single day by ordinary enumerators at a comparatively cheap rate, while the special inquiries required a huge staff of highly-trained experts, a long period of time, and a fund which, it appeared from Mr. Porter's paper, ran into millions sterling. He was glad to see that Mr. Porter agreed with him that the two, as they required utterly different machinery, should be kept entirely separate; and he commended this opinion of Mr. Porter, as also his further opinion, that the questions in the enumeration schedule should be as few and as simple as possible, to those gentlemen who, in their laudable eagerness for information, tried at each successive census to introduce new topics of inquiry, and to add more and more questions to the householder's schedule. Mr. Porter had given an example of the hopelessness of getting trustworthy answers to any question that involved the least effort of thought or memory. What could be a simpler question, most outsiders would think, than this: *How many deaths have occurred in this family in the past year?* But Mr. Porter had found that some 50 per cent. of the deaths that had actually occurred were omitted in the answers to this simple question. In the English census of 1891 an addition, against which he had protested in vain, was made to the occupation questions in the schedule, and each person engaged in any industry was asked to state, by making a cross in the appropriate column provided for the purpose, whether he was employer, employed, or neither. In many schedules a cross was made in every one of the three columns, in many more in two of them, and, when the final tabulation was made, it was found that in some trades the persons returned as employers outnumbered those returned as employed. Another instance of the extremely untrustworthy manner in which ordinary men filled up a schedule was afforded by an inquiry some years back, on which he had been required to write a report, into the condition of working men in certain districts of London. The inquiry had been very badly conducted by the person who managed the business in one of the districts, and had to be made again a fortnight later. He had taken the trouble to compare the two schedules given by a number of men, and had found that the statements made by the same individuals as to their wages, and as to the time they had been out of work in the past six months, were in many cases utterly different.

He was as desirous as any one else to have ample statistics, but what he desired still more was to have accurate statistics; and the question, to his mind, of most practical importance at the taking of a census was, not how far they could persuade the authorities to extend the field of inquiry, but how they could manage to secure more trustworthy answers to the questions already included.

Mr. NOEL A. HUMPHREYS said that his experience of the last census almost made him long for another census in order to be able to try the effect of the electric tabulating machine. From the

description Dr. Hollerith had given, they must admit that it appeared to have already attained success, and in its present condition it promised greater accuracy in tabulation than the mechanical methods usually adopted, owing to the facility with which certain classes of errors could be detected by the machine. The value of census, and indeed of all statistical, work depended on the accuracy of the initial operations, whether by means of a tick made on an abstract sheet with the pen, or of a hole punched in a card. He was glad to find that there was nothing in the use of these cards to prevent the initial operations being rendered fully as accurate as the ticking system. The card punching had in fact the great advantage that the whole of the operation of the classification lies within a very moderate space immediately under the eye of the operator, instead of being spread over unwieldy abstract sheets such as have necessarily been used in the English Census Office. It must be remembered that with either method the value of the results depended upon the amount of trouble taken to verify this initial classification. One difficulty occurred to him in connection with the punching system, and that was, that all the varied classifications must be done by one person direct from the original schedule, whereas in the English Census Office the different processes are separated, in order to have experts in occupations to do one portion, experts in birth places to do another, and so on. In the American system the punching operation must be rendered entirely mechanical. This involved a system adopted to some extent in England, of "editing" or what might be called "coding" the returns before the cards are punched, in order to render this process purely mechanical. If the different portions of the returns, such as the occupations, were passed through the hands of an expert, and the difficult ones "coded" before being punched, the American process could be adopted without increasing the risk of inaccuracy. It is absolutely necessary, however, to insist upon the expenditure of the requisite time and money to re-working and verifying a sufficient proportion of the work. In the English Census Office an average of at least 10 per cent. was re-worked, in order to maintain a fair standard of accuracy, and to cancel really careless work. Dr. Hollerith had explained to him that this system was to some extent carried out at first in America, but that subsequently the operators (nearly all ladies) became so expert that the officials had felt themselves justified in reducing the amount to be re-worked. He himself believed that if in our next census Dr. Hollerith's machine could be tried, it would open out possibilities for an immense increase of valuable statistics, without any corresponding increase in the cost of the tabulation.

Mr. J. A. BAINES, while joining in Dr. Ogle's congratulations, said that he could sympathise with Mr. Porter as to the want of a permanent census organization. In India he had none under him, but had been summoned by telegram to an empty office. He had in four or five months to draft his own rules, revising them chiefly in the light of the experience of some of his colleagues who had helped him ten years previously. His experience however

differed from that of Mr. Porter, in that the Indian Census was comparatively simple, except in point of numbers. The American Census resembled rather that of Rome, where it was not so much an enumeration of people as of property, for it was upon the results of these quinquennial enumerations that the taxation of the empire was based. In order to ensure a certain amount of accuracy, it was made a semi-religious function, and the Roman householder, after making the return, was required to repair to the temple and there solemnly take a bath, whence probably is derived the term "lustre"—a period of five years' intermediate washing being informal. As regards establishment, the great inconvenience of not having a permanent office was that several months had to be spent on each occasion in teaching a large number of assistants. Mr. Porter had endorsed Lord Farrer's opinion that a statistician must have "views," and he (Mr. Baines) concurred in this, so long as the man did not hold settled convictions: he must have an open mind, be loyal to the *data*, and not use the figures merely to support conclusions already formed. As regards the method of enumeration, the census in India was almost everywhere taken, as in England, in a single night, and the inquiries were consequently confined to much narrower limits than in the United States. The great advantage of this was the far more accurate enumeration, which necessitated simple questions. He did not think that errors in defect balanced those in excess; they might do so over very large areas, but they certainly did not in tracts of from 750,000 to a million persons, as he had carefully tested this point in India. They had a great deal to learn from America, and he had often wished to have the Hollerith machine for his census work, although it was doubtful whether he could have found anyone quick enough to learn to use it, India being very backward in taking up such inventions, apart from a difficulty about the current. Five years ago there was hardly a single typewriter even in any office in the country. But for the abstraction and tabulation he had been able to draw on a large staff, as India possessed a literary proletariat fairly educated for that sort of work. Their caste prohibited them from taking any manual employment, and he had therefore found the full staff he required at very short notice, and they worked, when trained, like machines. In the first few days 90 per cent. of their abstractions had to be worked over again but they were soon able to reduce this quantity, until they finally re-worked only one-third of the results, and even less. But when it came to the tabulation, he had to weed out the office very much, because he found that the most efficient abstractors were by no means good tabulators. They were proficient in the mechanical process, but could not combine the figures, and were constantly "miscolumning," as they termed it. Still, on the whole, he had derived an enormous advantage from this staff of high caste literary candidates. The cost of operations subsequent to enumeration amounted to about Rs. 6·5 per 1,000 of the population, out of a total of Rs. 11, and was thus cheaper than the census in almost any other country, even when allowance is made for the comparative cheapness of living in India. He was glad to find that

Mr. Porter's views as to the enumeration of occupations coincided with his own. It was perfectly impossible, in his experience, to get a correct census of occupations, either by means of enumerators who filled up the schedule, or by trusting the householders to do so. Mr. Porter had mentioned the difficulty regarding languages in some large towns, and he might remark that his schedules, weighing in all 290 tons, were printed in seventeen languages, and filled up with the names of over one hundred dialects. On one other point he was completely in accord with Mr. Porter, and that was in regard to simplicity of the schedule. If ever they attained to a quinquennial census, the aspiration of every census commissioner, the schedule should not be one bit more elaborate than the one suggested in the paper, and even in that two or three columns might possibly be omitted.

Mr. F. B. GARNETT said that he, as well as all others who had attempted it, had found great difficulty in endeavouring to estimate the total value of property in the United Kingdom, and had found that the only method of reaching even an approximate total was by capitalising the annual value of real property of various kinds, profits of trades or professions, and income from all other sources at so many years' purchase, while the number of years might vary at different times, according to circumstances; and those who entered on such speculations were not always agreed as to the proper estimate to be taken for a basis in respect of each class of property. He would like to ask, therefore, whether in the United States they possessed advantages which did not exist in England for arriving at what might be considered a true valuation of the national wealth.

Mr. JOHN B. MARTIN reminded the audience that the Royal Statistical Society had always been most persistent in its endeavours to secure a quinquennial census. It had appointed a special Census Committee, and only last summer a deputation from the Council had waited on the President of the Local Government Board, the Right Hon. G. J. Shaw-Lefevre, an ex-President of the Society, and discussed with him the possibility of bringing about that most desirable consummation. It was agreed on both sides that such an event would entail the institution in Great Britain of a skeleton permanent department such as Mr. Porter proposed for the United States. He reminded the audience also of the existence of the International Statistical Institute, founded under the auspices of this Society, and comprising the most distinguished statisticians of all countries, the aim of which was to bring the methods of the statistics of various countries into line. There was some shadowing forth of progress in this direction in the paper just read, and he hoped that the time would come quickly when uniform schedules of vital statistics and of census returns would be adopted throughout the whole civilised world.

The CHAIRMAN (Dr. G. B. LONGSTAFF), in rising to propose a very cordial vote of thanks to Mr. Porter and Dr. Hollerith, said

that the point which Mr. Porter had urged with so much force, as to the institution of a permanent census office, was one which that Society had constantly brought before the Government. As regarded a quinquennial census they had now achieved a substantial success. The scheme for the partial equalization of rates in London depended upon a system of levying an even rate over the whole metropolis and distributing it according to the population of the several districts, and the Government had at last realized that this could only be done by a frequent census. It was accordingly now ordained that a census should be taken in London in 1896, under the auspices of the London County Council, and paid for out of the rates. He trusted that Dr. Hollerith's machine could be utilised on this occasion, and that by this means the census could be made at the same time cheaper and more comprehensive. There was one point to which Mr. Porter had not alluded. He believed that the *fons et origo* of Mr. Porter's trouble was the constitutional difficulty in the central Government's collecting information. He hoped that Mr. Porter would enter on the arduous task of reforming the constitution of the United States at least to the extent of enabling them to have a permanent census office and permanent records. If the registration system could be established throughout the United States, it would prove a gigantic gain to statistical science. As a theatre of statistical investigation at the present time, no country in the world was so interesting as the United States, but with the imperfect tools at command they were unable to deal with a number of problems quite unequalled elsewhere for magnitude and interest.

MR. PORTER replied to various questions. With regard to an inquiry by the Chairman, he had no reason to believe that there was much error in the amount of mortgages in consequence of people withholding statements. It had at first been feared that difficulties might arise in this connection, owing to the enumerator being a local man, and the latter had therefore made only the inquiries noted on the schedule; the remainder of the information was obtained by direct correspondence from Washington. Besides this precaution, anyone refusing to give information under this head was liable to a fine of 100 dollars, and in some cases the penalty was actually enforced. Still, there were doubtless errors in the returns. He had at the outset protested strongly against the inquiry, but his opinion had been over-ruled. Replying to Major Craigie and others concerning the definition of a mortgage, Mr. Porter said that the investigation included what were known in America as real-estate mortgages, and not chattel-mortgages. All mortgages in America, to be valid, were recorded, but it often happened that people, when they had paid off a mortgage, forgot to see that it was taken off the record; and many which had been partly paid off were found to be still upon the record. It was not possible therefore to base the results simply upon the records. For full explanations of the methods adopted to prosecute this inquiry, he referred to the paper by Mr. George K. Holmes published in the *Journal* of the Society (vol. lvi, September, 1893).

Replying to Mr. Garnett, he thought that in America they had rather better grounds for estimating the national wealth than in England. Taxation in every State and territory was based on the valuation by assessment of both personal and 'real estate. In arriving at the figures, they first ascertained the value of every given township in the country, and then addressed about 150,000 circulars to all real-estate owners and county recorders, requesting them to fill up certain schedules as to the value of property in the locality, and if possible to show the actual value at which any piece of property had changed hands. In this way they obtained a sort of guiding basis for each district. The value of the railroads, &c., was then included as indicated by Mr. Garnett, but he quite agreed with him as to the difficulty of assessing trade profits. At the best these statements were but estimates, and must be so regarded, even though great care had been taken in their preparation. The seventh volume of the Tenth Census contained a full statement of the plan adopted by him (Mr. Porter) at that time, and a similar, though perhaps more elaborate scheme was used in the Eleventh Census.

Sir Francis S. Powell inquired as to the method of taking the religious census. Mr. Porter said that he had avoided seeking information from the individual. Inquiry was made of the officials of the various religious bodies throughout the whole country. The 21,000,000 who were returned in this connection represented only the communicants belonging to each body, while no enumeration had been made from house to house, it was quite possible to form an estimate of the religious population of the United States upon the basis of the communicants reported sufficiently accurate for all purposes. The usual way of computing religious population was by multiplying the number of communicants of any Protestant denomination by $3\frac{1}{2}$. This is on the supposition that for every communicant there were $2\frac{1}{2}$ adherents, including young children. Dr. Carroll's figures show the Protestant population to be 49,630,000, and the Catholic population at 7,362,000. This, he contends, stands for the Christian population of the country. After allowing for Jews, he arrives at the conclusion that about 5,000,000 of our population in 1890 belong to the non-religious and anti-religious classes, including free-thinkers, secularists, and infidels. In collecting the statistics of religions, he had met with a very good instance of the necessity of simplicity in the inquiry. In reply to the question, "What is the seating capacity of your church?" the answer, in many cases was, "Oak," "Pine," &c., as the case might be.

Mr. HOLLERITH, with reference to the liability of the machine to get out of order, said that in making the contract with Mr. Porter for the use of the machines, a clause had been introduced involving a penalty of 10 dollars to be paid by the inventor for every day that the machine was out of order. The penalty had never been enforced. Replying to other questions, the cards were only passed through the machines four times during the whole of the operations. They were stored for future reference,

and every card was so marked that it could be compared with the original schedule at once. An error card had occasionally been met with, and had been sent to the "error" section of the department, where a few men were employed rectifying mistakes.

He should be happy to exhibit the machine in operation upon some future occasion. With regard to the system itself, he had been making many experiments upon a considerable scale, involving the use of about 5,000,000 cards, on which the amounts, instead of individual items, were recorded. One card, representing a farm, for instance, would give the total number of acres, number of horses, value of the farm, and the implements, stock, produce, &c. By attaching to the machine an integrating device, he had been able to make it a species of adding machine. This led directly into other fields; he was now experimenting on railroad accounts, and hoped to accomplish this also.

A cordial vote of thanks was passed to Mr. Porter and Dr. Hollerith, and the proceedings terminated.

MISCELLANEA.

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- I.—*An Estimate of the Degree of Legitimate Natality drawn from Observations made at Budapest. By Herr JOSEPH KÖRÖSI (Director of Municipal Statistics, Budapest).*

[ABSTRACT of a Paper read before the Royal Society, and published in the *Philosophical Transactions*.]

The table of mortality ("life-table") shows for each year of age the probability of dying in the course of one year. The table of natality ought to show, in a corresponding way, for each year of age of the parents, the probability of a birth during a year. Notwithstanding this parallelism of the aim, the importance of the results is different. In the life-table we have to deal pre-eminently with the observations of a natural phenomenon, independent of human will. Not so in the case of fertility, which—partly, at least—is also influenced by voluntary causes. But, as also the phenomena of a voluntary kind have their regular course, and as the real effect of the law of population is finally the product of the causes of both orders, it needs no special proof that these phenomena also ought to be subjected to the measuring method of statistics. Therefore, one would not deny the legitimacy of the attempt to calculate the probabilities of birth, though it cannot be denied that the results to be expected are further from a natural law than the inquiries of biometry.

Another difference is presented by the fact that death is caused by the physical conditions of a single person only, whilst fecundity is due to those of two. The probability of having a child at a given age varies much according to whether the parties are young, middle-aged, or old. As we have continually to reckon with this circumstance, we may be allowed to introduce two denominations for the two species of natal probabilities, naming those which regard only one sex as *monogenous*, and those which take into consideration the age-combinations of both parents as *bigenous*. Further, let us name those tables which proceed by single years

specified, and those where the ages are put together by greater (quinquennial, decennial, etc.) groups, *cumulative* ones. By a complete bigenous table of natality we mean now such a one as shows the probability for each single year of age of father and mother, and that not only separately, but by combining *each* year of age of one parent with each year of the other.

By this it may also be seen how much wider is the extent of the natality-table than that of the life-table. Whilst the latter, if proceeding by the single years from birth till the highest age, is composed of about 100, or for the two sexes, of about 200 yearly elements, this number rises in the table of natality to 1,500—2,000, this being the number of combinations for each of the 40—45 productive years of men, with each of the 35—40 productive years of women. As the youngest years and the most extreme age-combinations occur but very rarely, it is only with observations referring to the population of a great country that we could get reliable probabilities for these outlying cases. The half-million of inhabitants of Budapest furnished only 468 available age-combinations. If we could extend these observations to a population of ten millions, the number of available age-combinations would rise to above 1,000.

In order to ascertain the probability of birth for each combination of ages, we need two conditions; (1) that the census should tabulate the age of the married couples by combination of the single years; (2) that at each birth the age of the father and of the mother should be reported. If we then proportionate the figures of both sides, we get thus the probability of a birth for each age-combination. As the age-combinations of married couples are furnished by the census only at longer intervals, but the age of the parents of the new-born children continually, it is clear that the proportionation of these two figures loses more and more in reliability as the years of the births considered get farther and farther from the years of enumeration. It is therefore reasonable to restrict ourselves to the births of the years closest to the time of the census.

The table of Budapest is based on the schedules introduced by the author in 1888 for each legitimate birth. This schedule is to be filled up by the midwife, and has to be presented to the registrar of births at the moment of registration. The registrar has to transmit this bulletin each week to the municipal office of statistics.¹

This form contains quite a series of interesting and partly new questions, enabling us to reorganize the whole natal statistics

¹ The registration of births being in the hands of the clergy, the municipal administration could not succeed in adding new questions to these ecclesiastical registers. As may be seen by the author's *Statistical Year Book of 1870 for the City of Pest* (pp. 9 and 77), twenty years have passed since he made the first attempts to improve the birth registration, in order to reorganise and to enrich the natal statistics. All attempts being unsuccessful, he had finally to accept the compromise, that the desired information should be collected, not by the clergy, but by the midwife, the former restricting himself to the collection and transmission of the bulletins.

of Budapest in a much wider form. Thus, we now find ourselves in a position to inquire into the influence of parental age and occupation on fertility, on the vitality of the children, on the sexual proportion, on the number of the still-born, the influence of the duration of marriage on the number of children born, &c. In combining the 44,926 children born in 1889, 1890, 1891, and 1892, classified according to the age of their parents, with the data furnished by the census of 1st January, 1891, concerning the ages of the 71,800 married couples, we are also enabled to establish the present table of natality.

It is obvious that there will always remain a certain quota of cases where the statistical report cannot be produced. Especially at first, when people were not yet altogether favourable to the new institution, a large proportion of births escaped statistical elaboration. Thus, in those first four years' observations on which the present inquiry is based we obtained 92 per cent. of the registered legitimate births; whilst in the following year the percentage reached 97. But, in comparing the Budapest natalities, as contained in the present paper, with others, we ought to bear in mind that the first ought to be increased by 8 per cent.

The Budapest table of natality begins for the male with the age "under 20," for the female with that "under 16," and lasts up to the oldest ages observed. But, for our present inquiry, we can use only the period of fertility, that is, for the mother, up to about 55, and for the father to about 70 years—presenting thus ($51 \times 40 =$) 2,040 age-combinations. However, as, in the greater number of cases, the male procreative power is extremely reduced at 60, the female at 50 years, we may terminate our observations at the sixtieth year of paternal and at the fiftieth of maternal age. In this case our table embraces virtually ($41 \times 35 =$) 1,435 elements of age-combinations. The number of age-combinations for which births were reported amounts to 1,105. But, as the bulk of 72,000 families, if divided into 1,400 to 1,500 groups of age, furnishes too small figures for the outlying age-combinations, I left out of consideration the age-combinations containing only 25 families or less; and from the combinations containing 25 to 99 families, in order to enlarge the curves or to connect separated fragments of them, I admitted only those where the respective probabilities followed nearly the same course as the recognised part of the curve based on at least 100 families.² In such a way the table of natality embraces actually 468 available age-combinations.

Passing now to the results of these observations, I shall deal first with the monogenous natality, and subsequently with the bigenous one.

I. *Monogenous Natality.*

The two principal results are the following:—

1. That the summit of legitimate fertility is reached very

² In order to call the attention of the reader to the smaller value of the observations based on 25,699 families, I put those which had been thus admitted into brackets.

soon, so that the decline begins, in the case of the male, after 25, and in that of the female, after 18 years.

2. That the legitimate fertility does not remain at the same level for many years together, but that it declines *immediately* after reaching the highest point.

These results do not agree with the view of physiology, according to which the generative power should remain for some time at the same height. But we ought not to lose sight of the fact that the legitimate fertility is to be regarded as the resultant of two different forces. The number of children born in a family is, in fact, not a consequence of the physical power only, but also of the wish and will to have offspring.

In a family where children already exist, the wish for the increase of them is weaker and will be weaker the greater the number of offspring. Now as the number of children increases with advancing age, the force of the moral factor increases also with the age. Thus passing from younger couples to older ones, we pass at the same time from small to large families, that is from those where the wish for offspring is greater than those in which it is less, where consequently the influence of the moral factor is preponderant over the physiological. It is to this preponderance that we must attribute the fact that the probability of birth diminishes so rapidly and so regularly.

(a) *Female Monogenons Natality.*—The census of Budapest found only five wives under 16, and in the course of four years only 6 births have been reported from mothers of that tender age. Twenty-seven wives were between 16 and 17 years, and eighty-eight between 17 and 18. Thus the reliable portion of our table of natality begins with the women between 18 and 19. But with this age we find ourselves already at the maximum of *legitimate* fertility. At the age of 18 and 19 years the annual probability of births is 44.6 and 42.2 per cent.; that is to say, we may suppose that at this age nearly one wife out of two will give life to a child. Beginning with the 20th year, the probability of births declines in a decided manner. At first the decline is but slight, but notwithstanding that, at the age of 25 years the natality amounts to only $31\frac{1}{2}$ per cent., and at 30 years to only 24 per cent. About the 34th year the curve of natality undergoes a stronger declination. Thus at 35 it amounts to only 16 per cent., and five years later to only 8 per cent. After the age of 43 we again observe a still more marked decline, so that at 45 we find a natality of only 1.4 per cent., that is, we may bet 70 to 1 against a child being born at this age. In the two following years the natality sinks to one-half the above mentioned figure. At the age of 50 only one single birth will occur amongst 1,943 families, as 1,457 mothers of this age had in four years only 3 children. But at this point we reach also the extreme limit of maternal legitimate fertility.

During the four years' observation we found, it is true, still four older child-bearing mothers: two at 54, one at 56, and another at 57 years; child-births reported for still higher maternal ages may be regarded as erroneous.

We may thus assume *that the legitimate fertility of woman reaches its climax (in our country) at the age of 18 and 19 years, and declines above and below this age; further, that it arrives at its null-point at 58.*

We reproduce here the results of the monogenous table, giving both the rough and corrected figures (the mode of corrections is explained in the "Appendix"³). Besides that, we have set down the female natalities for Berlin (1887-90), according to the communication of Dr. Boeckh, and the same for the kingdom of Sweden, as communicated in manuscript by Mr. Sidenbladh.

Annual Natality per 100 Wives.

Years.	Budapest (1889-91).		Berlin (1887-90).	Sweden (1891).
	Corrected Figures.	Rough Figures.	Rough Figures.	Rough Figures.
16-17	36.0?	(36.1)	—	(52.7)
17-18	38.0?	(33.8)	(52.4)	55.9 max.
18-19	40.0?	44.6 max.	49.5	50.3
19-20	40.3 max.	44.2	52.3 max.	51.8
20-21	39.7	34.9	48.5	54.8
21-22	38.5	41.2	48.1	48.3
22-23	37.2	37.7	43.5	46.5
23-24	35.3	35.3	42.9	42.9
24-25	33.4	32.8	40.1	42.6
25-26	31.6	31.4	37.4	41.1
26-27	30.1	30.0	33.7	38.9
27-28	28.9	28.6	31.0	37.8
28-29	27.6	27.4	28.3	35.8
29-30	25.9	28.7	28.4	35.2
30-31	24.0	21.2	22.7	35.0
31-32	22.3	22.4	22.7	32.2
32-33	20.9	21.3	20.0	31.4
33-34	19.6	19.8	18.7	29.8
34-35	18.2	17.9	17.3	27.7
35-36	17.0	16.1	16.6	27.9
36-37	15.9	16.4	14.3	26.4
37-38	14.7	15.5	12.8	25.9
38-39	13.3	11.8	11.1	25.6
39-40	11.7	14.0	9.8	22.1
40-41	9.8	8.8	6.7	20.3
41-42	7.7	8.3	5.9	16.9
42-43	5.7	4.7	4.2	14.0
43-44	4.0	4.0	2.7	11.3
44-45	2.7	2.4	1.5	7.7
45-46	1.7	1.4	1.0	4.8
46-47	1.0	0.7	0.5	2.8
47-48	0.6	0.8	0.4	1.3
48-49	0.4	0.2	0.2	0.7
49-50	0.2	0.2	0.2	0.2
50-51	0.1	0.05	—	0.1
51-52	0.1	0.20	0.2	—
52-53	—	0.07	—	—
53-54	—	—	—	—
54-55	—	0.06	—	—

³ Not reproduced in this abstract.

We see that the general movement of the curve of Berlin natality is similar to that of the Budapest one. Both show that the climax of legitimate fertility is reached before the 20th year, and that the decline begins immediately afterwards, and goes down in rather regular steps. The same holds, also, for the Swedish table, which, moreover, excels by a most remarkably high natality.

I now pass on to introduce the cumulative natalities for quinquennial groups of years. As we have to deal here with greater masses, we find that even the rough figures show a most remarkable regularity. Here we insert also those few probabilities which we found scattered in the statistical publications of different countries. In comparing these probabilities with those of Budapest, we have to take into consideration the fact mentioned already, that these latter should be increased by about 8 per cent.

Comparative Table of Female Quinquennial Natalities.

Age of the Mother.	Sweden. 1891.	Finland. 1880-81.	Norway.* 1874-76.	Denmark. 1880-89.	Alsace and Lorraine. 1872.
15—19	51·81	37·95	(26·4) 41·3	71·50 (?)	46·5
20—24	45·14	40·59	(43·0) 57·9	49·37	56·3
25—29	37·53	35·69	(39·7) 43·0	40·50	46·3
30—34	31·18	32·15	(34·9) 36·0	31·15	38·8
35—39	25·04	26·12	(29·6) 30·0	22·98	28·2
40—44	14·23	15·75	(17·9) 18·1	11·39	—
45—49	2·00	2·68	(3·2) 3·3	1·3	—
50—54	—	—	(0·16) 0·16	—	—

	Brunswick. 1880-81.	Edinburgh and Glasgow. 1855.	Berlin. 1887-90.	Budapest. 1889-92.	General Average.
15—19	58·1	50·0	50·34	42·8	47·35†
20—24	45·4	41·79	45·55	35·8	45·87
25—29	34·7	34·64	33·60	29·2	37·24
30—34	26·8	26·56	22·50	20·6	29·53
35—39	19·8	20·39	14·50	14·7	22·41
40—44	8·1	8·04	6·03	5·9	9·73
45—49	1·1	1·27	0·74	0·7	1·45
50—54	—	—	0·02	0·07	0·03

* The figures in brackets are rough, the others corrected.

† Without taking into account the natality of Denmark, which seems improbably high.

Examining the course of these nine curves of natality in different populations of central and northern Europe, we may state, as a general rule, that—at least, in this part of the globe—the prolific power of married women reaches its summit very quickly, even in the first years of marriage, and that it does not afterwards remain for any time at that high level, but bends immediately downwards. In the cities the female natality seems to be weaker than for the whole population of the country.

(b.) *Male Monogenous Natalty.*—Our table furnishes us during four years with only 2 children from fathers below the age of 20—a natural consequence of the scarcity of husbands at this age. Even at the age of 20 years the census found only 7, and in the two following years of age only 20 and 53 husbands. Therefore, if we restrict ourselves to those ages where there have been observed at least a hundred families, our table cannot begin earlier than at the age of 23 years.

For this and the following year of age the probability of an increase of family amounts to 33 per cent., that is to say, that amongst three families where the father is of 23 or 24 years, there is one which will have a child within a year. With the fathers of 25, the natality rises to 38·9 per cent. But at this early age we have already reached the climax of the male legitimate fertility; each succeeding year depresses the curve of natality. Thus the probability of birth at 30 years of age is 31·7 per cent.; five years later, only 23 per cent. After this the curve tends rapidly downwards; at 40 years it stands already at 15 per cent., that is, we may bet 7 to 1 against having a child during the year. Ten years afterwards the probability amounts to 4·2 per cent., and at the age of 60 years to only $\frac{9}{10}$ per cent. At the age of 65 years the probability of becoming a father is $\frac{1}{3}$ per cent., and at 69 years only 1 out of 500 husbands will have a child.

The oldest fathers are: at 71 years three, and at 76 one. But the data respecting the oldest fathers are to be accepted in general with still greater hesitation than those of mothers. The doubtfulness of these data may be judged by the fact that the reported fertility of the fathers above 66 is an increasing one! But let us add that physiology admits the conservation of male generative power until the eightieth year.

The facts we have mentioned lead us to suppose that this power is not fully developed before the age of 25. This supposition finds support in the observation of the natality shown at younger ages. If in consequence of the insufficiency of the data we summarise all the younger husbands in three groups, we find that those under 22 years have a natality of $33\frac{1}{3}$ per cent., those of 22 years of 26·9, whilst the following three years of age show an increase.

We may thus assume *that the male generative power reaches its climax in married life at the 25th year, that it declines above and below this age, and that it reaches its vanishing point at about 70 years*

As before, we reproduce also here the rough and the corrected figures of the monogenous table for each year of life. As corresponding observations are to be found nowhere else, we must restrict ourselves to our own results.

Annual Natality per 100 Husbands.

Years.	Corrected Figures.	Rough Figures.	Years.	Corrected Figures.	Rough Figures.
23—24	33·0	33·3	44—45	10·9	10·9
24—25 ...	34·4	33·9	45—46	9·5	9·0
25—26 ...	35·0	38·9	46—47 ...	8·3	7·5
26—27 ...	35·3	36·4	47—48	7·2	7·9
27—28	35·1	34·8	48—49	6·2	5·7
28—29 ...	34·3	34·1	49—50	5·4	5·2
29—30	32·9	36·6	50—51	4·7	4·2
30—31	31·1	29·5	51—52	4·1	4·1
31—32	29·3	27·6	52—53	3·5	3·4
32—33	27·6	29·2	53—54	3·0	3·2
33—34 ...	26·1	25·1	54—55	2·6	2·2
34—35 ...	24·6	23·9	55—56	2·2	2·1
35—36 ...	23·4	23·9	56—57	1·9	2·1
36—37	22·1	22·0	57—58	1·6	1·2
37—38	20·8	21·5	58—59	1·4	1·4
38—39 ...	19·5	17·8	59—60	1·2	1·2
39—40 ..	18·2	20·7	60—61	1·0	0·9
40—41 ...	16·7	15·3	61—62 ...	0·8	0·9
41—42 ...	15·3	15·3	62—63	0·7	0·6
42—43 ...	13·8	14·6	63—64	0·6	0·7
43—44 ...	12·3	11·8	64—65	0·5	0·3

The quinquennial probabilities follow here, accompanied by those two single fragments of male natalities which statistical literature offers, that is, of the kingdom of Norway and of Alsace and Lorraine. We learn by this comparison that the male inhabitants of the city show a considerably weaker natality than those of the country:—

Annual Natality per 100 Husbands at the following Quinquennial Groups of Age.

Years.	Norway (1874-76).	Alsace-Lorraine (1872-73).	Budapest (1889-92).
15—19.....	(18·2) 27	21·2	?
20—24.....	(38·9) 49·8	61·7	33·3
25—29.....	(38·6) 43·6	53·3	35·8
30—34.....	(35·8) 37·7	44·2	27·1
35—39.....	(29·5) 30·3	32·5	21·1
40—44.....	(22·1) 22·5	20·9	13·8
45—49.....	(12·6) 12·8	10·9	7·2
50—54.....	(6·2) 6·3	....	3·5
55—59.....	(2·51) 2·6	....	1·7
60—64.....	(1·25) 1·33	....	0·7
65—69.....	(0·61) 0·66	....	0·4
70—74.....	(0·30) 0·32	....	0·2

II. Bigenous Natality.

For simplicity we shall present first—and that only for the important part of the period of fecundity—the changes which

female natality undergoes, according to quinquennial increases in the father's age, without entering into a yearly specification of this latter factor. Then we shall present the counterpart, that is, the change in the natality at each age of the father according to quinquennial increases in the maternal age. Thus the first table contains the combination of specified maternal and cumulated paternal ages, the second that of specified paternal and cumulated maternal ages.

Abstract Tables of Bigenous Natality (Rough Figures).

A. Specified Maternal and Cumulated Paternal Age.

Mother's Age.	Father's Age.						
	25—29.	30—34.	35—39.	40—44.	45—49.	50—54.	55—59.
20—21.....	38·2	30·0	(32·7)	—	—	—	—
21—22.....	45·7	36·5	32·0	—	—	—	—
22—23.....	40·9	36·2	35·2	(21·9)	—	—	—
23—24.....	41·8	33·1	28·6	(20·4)	—	—	—
24—25.....	38·2	31·1	30·1	(25·0)	(19·4)	—	—
25—26.....	35·6	31·2	27·5	(27·8)	(18·6)	—	—
26—27.....	33·9	31·1	27·4	21·1	(18·5)	—	—
27—28.....	33·2	30·8	24·5	17·9	(16·8)	—	—
28—29.....	30·9	30·2	24·7	20·5	(19·3)	—	—
29—30.....	36·3	30·7	26·6	22·7	(20·3)	(20·2)	—
30—31.....	25·0	23·6	21·8	16·7	14·4	(14·8)	(6·0)
31—32.....	25·5	23·0	25·1	19·7	15·2	10·8	—
32—33.....	27·1	24·6	22·3	16·5	15·3	(18·5)	—
33—34.....	26·8	21·3	22·1	17·4	14·7	(10·6)	(11·5)
34—35.....	(25·9)	18·4	21·0	17·0	11·9	9·8	(11·9)
35—36.....	(21·2)	19·9	19·4	14·0	10·9	10·9	(10·4)
36—37.....	(23·9)	17·8	18·9	17·4	12·5	11·5	(6·8)
37—38.....	—	19·2	17·2	16·6	12·3	12·6	(9·7)
38—39.....	(17·1)	17·2	13·5	14·4	8·6	7·3	5·6
39—40.....	(22·0)	(16·8)	17·5	16·1	10·8	9·9	(7·6)
40—41.....	—	(10·2)	12·4	10·6	8·5	4·9	3·1
41—42.....	—	(10·2)	12·0	9·7	7·8	5·9	(5·1)
42—43.....	—	(3·9)	5·6	6·4	4·6	3·3	3·2
43—44.....	—	[0·7]	[5·5]	4·6	4·2	3·4	3·3
44—45.....	—	(3·9)	(2·5)	3·8	2·8	2·0	0·7

Following the figures in the horizontal rows, we see that even the uncorrected rough figures form very regular curves, which—between the most important part of the mother's life, that is, between 20 and 40 years—are at their maximum in the first column, then decline, and curve greatly. This means that, at this stage of life, the mothers acquire the highest degree of natality accessible to their age, with young, under-30-years-old fathers. Mothers above 40 years ought to prefer husbands between 30 and 40.

B. Specified Paternal and Cumulated Maternal Age.

Age of the Father.	Age of the Mother.					
	Under 20.	20—24.	25—29.	30—34.	35—39.	40—44.
24—25.....	(47·9)	36·3	27·0	(19·1)	—	—
25—26.....	(49·1)	43·0	30·8	(33·5)	—	—
26—27.....	(45·5)	42·0	32·4	21·3	—	—
27—28.....	41·7	39·5	32·2	27·3	(23·7)	—
28—29.....	(46·2)	38·0	35·1	23·2	(18·9)	—
29—30.....	(39·4)	42·6	35·7	30·1	(24·6)	—
30—31.....	(33·9)	34·0	32·6	22·1	19·7	(8·3)
31—32.....	(44·7)	32·8	30·5	22·8	16·9	(10·0)
32—33.....	(48·3)	37·4	32·3	24·9	17·6	(6·4)
33—34.....	(36·0)	29·7	30·6	21·3	19·9	(5·6)
34—35.....	—	30·1	26·8	22·5	18·1	(8·4)
35—36.....	—	31·3	27·3	23·7	18·9	(6·6)
36—37.....	—	32·6	26·5	23·2	16·4	9·0
37—38.....	—	30·2	26·0	23·1	18·4	7·3
38—39.....	—	27·0	23·1	18·5	16·4	7·6
39—40.....	—	(35·8)	26·3	23·9	18·3	11·3
40—41.....	—	(28·2)	19·1	16·7	17·2	7·5
41—42.....	—	(25·6)	21·5	19·7	16·0	8·5
42—43.....	—	(28·0)	23·5	18·7	16·0	9·1
43—44.....	—	17·4	25·0	14·2	14·3	8·0
44—45.....	—	18·1	21·0	16·5	13·5	6·9
45—46.....	—	(16·0)	18·5	14·4	11·8	6·1
46—47.....	—	—	17·1	13·1	9·9	6·1
47—48.....	—	—	(24·5)	15·2	11·7	6·3
48—49.....	—	—	(18·4)	13·8	11·0	4·1
49—50.....	—	—	(18·9)	13·6	9·0	4·9
50—51.....	—	—	—	15·0	9·6	3·9
51—52.....	—	—	[13·3]	[10·9]	12·9	3·8
52—53.....	—	—	—	[13·5]	11·1	3·9
53—54.....	—	—	—	[14·2]	10·0	3·8
54—55.....	—	—	—	[8·1]	6·7	3·0
55—56.....	—	—	—	(13·5)	(7·2)	2·6
56—57.....	—	—	—	(10·9)	(8·4)	5·1
57—58.....	—	—	—	(11·0)	(5·9)	1·9
58—59.....	—	—	—	—	(8·9)	(2·8)
59—60.....	—	—	—	—	(7·6)	(0·9)

The horizontal curves are also here regular enough. They show no up and down, but a constant, course. We see further that the males under 30 years, reach the relative summit of their natality, that is, the highest degree *which is accessible to their age*, with wives under 20 years; those between 35 and 45 ought to choose wives between 20 and 25, and those of the age of 45—50 years, wives between 25 and 30.

But if we inquire, instead of the highest relative natality, the highest absolute one, we see that this is reached where both parents are young—with the exception of the tenderest ages—that is where mothers under 25 years are married to husbands under 35.

*Probability of Annual Births in Budapest, according to the (Quinquennial)
Age of the Father and of the Mother respectively.*

Age of the Father.	Age of the Mother.						
	Below 20 Years.	20—24.	25—29.	30—34.	35—39.	40—44.	45—49.
Years.							
20—24.....	(48·0)	35·0	27·3	(22·8)	—	—	—
25—29.....	44·2	40·7	33·9	25·8	22·1	(16·0)	—
30—34.....	40·4	33·2	30·8	22·7	18·4	7·4	(1·8)
35—39.....	(35·6)	31·1	26·0	22·3	17·5	8·7	0·8
40—44.....	—	25·0	21·4	17·3	15·7	8·0	1·3
45—49.....	—	(19·7)	18·9	14·1	10·8	5·6	1·1
50—54.....	—	(22·2)	(20·2)	12·5	10·2	3·7	0·4
55—59.....	—	—	(15·8)	11·2	7·6	3·0	0·3

The absolute highest natalities, that is, the highest *isogens*,⁴ are to be found where both parents are young: the mother some years below or above 22, the father about 25—30. But besides this, each paternal and each maternal year possesses its own relative maximum, corresponding to a certain age of the other party. If in the bigenous table we connect these different points of greatest paternal or maternal natality, we obtain curves, which we call *curves of greatest relative natality*.

We learn (a) from the curve of greatest maternal natality—

1. That the period of male life from which the women of all ages (between 18 and 34 years) ought to make their choice embraces only five years.

2. That the wives of all these ages have the greatest chance to become mothers with husbands between 25 and 30 years.

3. Consequently that the women under 28 years ought to choose older husbands, whilst those above 28 years ought to choose husbands younger than themselves.

(b) From the curve of greatest paternal natality, we see—

1. That the extent of the most suitable female period is sensibly larger, embracing for the male between 24 and 46 years of age, eleven instead of five years.

2. That the husbands of these ages have the greatest chance of becoming fathers with wives between 18 and 29 years.

3. That at all these ages, in order to have the greatest chance of offspring, the fathers ought to be older than the mothers.

4. That this age difference, which for the husbands between 24 and 30 years is 5—11 years, rises after the age of 40 to 16 years. But let us here observe, that in the higher ages the difference must necessarily grow, as the female generative power expires sooner than the male one. Thus, for instance, males at 45 may select wives ten years younger, but males at 60 are obliged to go farther back than ten years, as with women of 50 years they would have no chance at all.

Thus we may deduce the truth that, in order to secure the

⁴ See the following paper, by Mr. Francis Galton.

greatest possible fecundity, the females ought to select in their younger years older husbands, and in advanced ages younger ones, but that the males ought to select always younger wives; further, that the husband may even be seventeen years older than the wife, but the age of the latter can surpass the age of the husband only by five years, and that only if she is above 30 years.

Conformably to the results already communicated, it appears that, according as the age of the mother progresses, the age-difference between husband and wife ought always to become less. Thus, the most advantageous difference is (the — sign indicating that the father is younger):—

With mothers of 18 years	+ 7 years
„ 20 „	+ 5 „
„ 25 „	+ 3 „
„ 30 „	— 2 „
„ 34 „	— 5 „

But, on the contrary, with the progress of the father's age his age advantage ought *always to increase*. Thus, the most advantageous age for the father is:—

At the age of 25	6 years above the age of the wife
„ 30	9 „ „
„ 35	14 „ „
„ 40	16 „ „
„ 46	17 „ „

Of course such investigations ought to be repeated on a greater scale before we could dare to pronounce a definitive opinion on this question, which has so serious an influence on the happiness of the individual and the development of mankind.

From the above we learn that in order to obtain the greatest fecundity, each of the two sexes requires to be at a specific age-distance from the other consort; that, consequently, the obtaining of the possible maximum is, so to say, hindered if the age of the other party is not the right one. Now, could we not infer that in those cases where the age of *both* parents corresponds to the best distance, the fecundity ought to be the greatest, and that, consequently, this age-combination ought to be regarded as the most fitted for marriage?

If we accept this reasoning, we ought to search for such combinations where the positive age-difference of the one consort is equal to the negative of the other. We see that the positive age-distance of the father equals the negative of the mother at the following ages:—

Father 24 or 26 and mother 20
„ 25 „ 18 or 19

Thus, if we do not take into account the oscillations of the two curves caused manifestly by faults of observation, the two

lines would meet at the section between 18, 19, and 20 years of female, and 24, 25, and 26 of male life.

Therefore we dare pronounce, though, in consequence of the importance of the question, not without some hesitation—the conclusion, *that the best chances of proliferation are offered by the wedding of 18—20 years-aged females with 24—26 years-aged males.* But this statement needs not only to be justified by still more and numerous observations in other countries, but requires also to be corrected for the circumstance that the greatest fecundity is not coincident with the greatest health of the children. As to this latter point I have had occasion elsewhere to make observations on the influence of the parental age on the mortality of children. The results which I obtained in that inquiry seem to advocate the procrastination of the time of wedding for one year later than the limits mentioned before.

[The above is only a brief abstract of the first portion of Herr Körösi's article in the *Philosophical Transactions of the Royal Society*. The remainder of the paper is chiefly a discussion on *isogens* (see Mr. F. Galton's paper below), and contains further remarks as to the uses to which the tables and isogens can be applied, and on the corrections which the results should undergo. Amongst these purposes are what may be called "birth-insurance," a system which could perhaps be extended so as to insure a sum to cover the cost, or part of the cost, of education, &c. We regret that space does not permit of our dealing at greater length with the isogens; the same reason has also prevented us from noticing many of the extremely interesting points raised in the course of the first portion, notably Herr Körösi's endeavour to discriminate between the "actual" and the "physiological" natality, and thus to calculate statistically the amount of the "moral restraint."]

II.—"*Results derived from the Natality Table of Körösi by employing the Method of Contours or Isogens.*" By FRANCIS GALTON, F.R.S.⁵

[From the *Proceedings of the Royal Society*, vol. lv.]

THERE are three variables in the statistics of natality. The age of the father is one, and that of the mother is another, and the percental offspring of parents of those ages is the third. These three variables may be coordinated in the same way as that which is daily followed at meteorological offices in dealing with (1) the longitudes of the various stations, (2) their latitudes, and (3) the barometric height at each. After these data have been entered on

⁵ Revised by the author.

a chart in their proper places, contours, known by the name of isobars, are drawn to show the lines of equal barometric pressure. In natality tables, the ages of the father and the mother take the place of the longitudes and latitudes in weather charts, and lines of equal birth-rates, or, as I would call them, "isogens," take the place of isobars.

Table I contains the means of each set of four adjacent entries in Körösi's tables, as shown by the arrangement below, the left-hand diagram containing the four entries, and the right-hand one

		Father's Age.					
		38	39	40	39		
Mother's Age.	28						
	29	21	23		24.25		29
	30	21	32				

giving their mean. The entries themselves were copied to the nearest integer from Körösi's tables. The means are recorded in Table I to the nearest integer only, subject to an allowance of correction not exceeding 0.30, made for the sake of slight smoothing; thus 24.25, which would otherwise have been entered as 24, might be treated as if it were $24.25 + 0.30 = 24.55$, and be entered as 25. Similarly, 24.75 might be entered either as 25 or as 24. It will be seen by the right-hand diagram that the position of the mean corresponds to the first moment of the years shown at the side and top; therefore the interval to which the annual birth-rate refers is made up of the half-year before and after the above-mentioned epoch.

The means that are enclosed in brackets are those in which one or more of the four squares from which they were derived were blank. They are, of course, less trustworthy than the rest; moreover, they may depend on less than 100 families.

The ages of married couples are distributed over only about one-half of the squares of Table I, as there are too few examples of other ages to be statistically available. This partial distribution is well seen in the accompanying diagram of isogens, where a dotted outline encloses all the material that can be used with safety. The broken line AB corresponds to the instances in which both parents are of the same age. The chart is practically limited to marriages in which the wife is less than 5 years older, and less than 17 years younger, than her husband.

It will be noticed that the isogens run in nearly straight, diagonal, and equidistant lines across the greater part of the chart. If we omit six squares in the upper left-hand corner, where there

TABLE I.—*Annual Percentage of Births according to the Ages of the Father and Mother, derived from Körösi's Table of Natality at Budapest.*

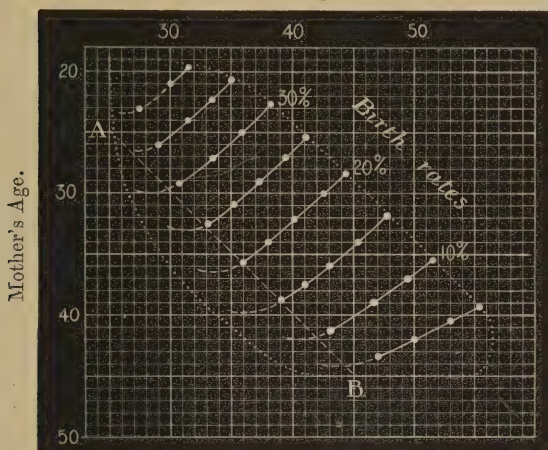
[The tabular values refer to the half-year before and after the beginning of the year entered at the top and side.]

Age of the Mother.	Age of the Father (the even years are omitted).																
	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57
19.....	(49)	46	(42)														
21.....	44	44	42	33	34	(36)											
23.....	43	42	41	35	35	32	30	(26)									
25.....	32	36	38	32	31	30	29	28	(25)								
27.....	31	32	36	33	31	26	27	25	19	(21)							
29.....		34	35	31	32	27	27	24	21	23	(17)						
31.....		24	26	22	24	26	24	21	20	18	17	16					
33.....			28	25	22	22	23	22	18	17	16	15	(12)				
35.....			24	19	21	19	21	29	16	15	13	10	12	(9)			
37.....				(13)	18	21	17	17	18	16	14	13	12	12	(13)		
39.....					(17)	(16)	16	15	15	15	14	10	9	9	9	(5)	
41.....						(11)	(12)	12	10	11	10	10	6	6	5	(3)	(5)
43.....							(6)	(7)	6	6	5	5	4	4	4	(3)	3
45.....									3	(4)	3	2	3	2	(2)	(1)	

is no room for an isogen, we shall find these diagonal lines to cross 89 of the total number of 118 entries, or between eight- and nine-tenths of them. These peculiarities indicate the existence of a very unexpected law of natality, one that is well brought out by Table II, which shows the values measured from the dots marked on the isogens. The dots have been taken at convenient places

DIAGRAM OF ISOGENS.

Father's Age.



to serve as examples, one at the beginning, one at the end of the straight portion of each isogen, and others at intervening places.

The curious law referred to above is a consequence of the straightness and diagonal course of the isogens, namely, that the *sums of the ages* of the parents, to which each point in the straight portion of the same isogen refers, are *constant*. In other words, the birth-rate is determined here by the *joint ages* of the father and the mother. The difference between the ages of the two parents is of no account whatever in eight- or nine-tenths of the total number of marriages. It is only when the wife is (1) older than the husband, or (2) when she approaches the limit of the child-bearing age that this curious law ceases to hold true. The connection between it and the straightness of the isobar is easily understood from the equation to a straight line of $x + y = \text{constant}$, for if x represent the age of the father, f , and if y represent that of the mother, m , then $f + m = \text{constant}$. That this alleged law is a fact is conspicuously evident from the successive groups in the two columns headed B + C in Table II.

A second curious result depends on a coincidence between the increasing age of either parent and the decrease of fertility, owing to which it happens that the sum of the three elements of (1) father's age, (2) mother's age, (3) percental birth-rate in a year, has a value that is itself approximately constant, as is seen in the column headed A + B + C. Its lowest limit is $90\frac{1}{2}$, and its

TABLE II.—*Values of the Isogens at the Dots in the Diagram.*

Percentage of Births in the Year. A	Examples of the Corresponding Ages of the		B + C.	Accepted Mean of B + C.	A + B + C.
	Mother. B	Father. C			
40	23	27½	50½	51	91
	21	30	51		
	19½	31½	51		
35	26	29	55	55½	90½
	24	31½	55½		
	22	33½	55½		
	20½	35	55½		
30	29½	30½	60	60½	90½
	27	33½	60½		
	25	35½	60½		
	22½	38	60½		
25	32½	33	65½	66½	91½
	31	35¼	66¼		
	29	37¼	66¼		
	27	39½	66½		
	25½	41	66½		
20	35¾	35¾	71½	72	92
	34	38	72		
	32	40	72		
	30	42½	72½		
	28¼	44¼	72½		
15	39	39	78	79	94
	37½	41	78½		
	36	43	79		
	34	45¼	79¼		
	31¾	47¾	79½		
10	41¼	43	84¼	86	96
	39	46½	85½		
	37	49½	86½		
	35½	51½	87		
5	43½	47	90½	93	98
	42	50	92		
	40½	53	93½		
	39½	55½	95		

highest, up to the isogen of 10 per cent., is 96, but it increases to 98 at the isogen of 5 per cent. If we accept a constant value of 93 or 94 for this sum, we shall never be far wrong in the larger part of the chart. It follows from this that if we wish to ascertain the percental birth-rate per annum for a married couple, within the limits of the chart where the isogens run straight and parallel, we have simply to add the ages of the father and mother together, and to subtract the total from 93 or 94. This gives the required

result with considerable precision. The approximate limits within which this curious rule obtains are: (1) the wife is not to be older than her husband; (2) she is not to be less than 23 years of age, nor (3) more than 40.

Example.—In any large number of husbands and wives living under like conditions to the inhabitants of Budapest, whose respective ages at their nearest birthdays, to 21st June, 1892, were, that of the father, 35, that of the mother, 27, we should calculate that the number of children born to them during the year 1892 would be at the rate of $93 - (35 + 27)$ per cent. = 31 per cent.; the isogen makes it about 32 per cent.⁶

It will be observed in the lower part of the diagram that the isogens tend to become more and more horizontal. This is due to the fertility of the male enduring to an age considerably beyond that at which it ceases in the female.

I shall not now enter into the other salient peculiarities of the isogens further than to allude to the curious change in their course which occurs when the wife is older than the husband. When she is from 30 to 38 she certainly seems to be appreciably more fertile with a husband of her own age or somewhat older, than she is with one who is younger. I should hesitate to ascribe this to physiological causes without corroborative evidence derived from breeders of stock. It is very possible that a growing indifference on the part of young husbands to ageing wives may have something to do with it.

It is almost needless to say that if it be desired to obtain the observed birth-rates for a mother of any specified age, and for fathers of various ages, the corresponding line of Table I will give the information; while, if the smoothed values are wanted, a similar line in the chart of isogens will give them, after being smoothed, not in one dimension only, *but in two dimensions*. Similarly, as regards the birth-rates for a father of any specified age and for mothers of various ages, by following the vertical columns instead of the horizontal lines.

In conclusion, I would call attention to the fact that, though Körösi's tables give fully sufficient material for the discussion of percental birth-rates, they do not afford the required data whereby to determine the second postulate of paramount importance, namely, the degree of conformity of individual cases to the means of many cases. We can deduce nothing, or next to nothing, from these tables in reference to the Facility of Error at the various positions in the chart, whether or no it conforms to the normal law of frequency; still less, what the Modulus of Error may be, and whether it is constant throughout the chart, or whether it varies in accordance with some definite law.

The answer to these questions admits, as I conceive, of being obtained by bestowing a moderate amount of work on the original

⁶ A rough mechanical arrangement was exhibited by which isogens may be drawn. It consists of three sliding pieces connected by a string of constant length. A coloured patch is pasted on the board on which they slide, to show the limits within which the isogens drawn by it are trustworthy.

observations, selecting at first a few squares for exploratory purposes, such as are (1) distributed evenly about the chart, and (2) contain each of them not less than some 300 observations, and (3) whose means accord with the smoothed isogens that pass over the squares, thereby affording satisfactory centres of reference.

III.—*Proceedings of Section F of the British Association.*

THE meeting of the British Association at Oxford this year, under the Presidency of the Marquess of Salisbury, was of an unusually brilliant character, and was especially remarkable for the large number of distinguished foreigners present. Much of the success of the meeting was due to the hospitality extended by the university to the members of the Association.

The Section (F) devoted to Economics and Statistics did not fail to obtain its share of a most successful gathering, attracting many more well known economists than usual, among whom may be mentioned Dr. Edward Atkinson (Boston), Dr. Stephan Bauer (Brünn), Monsieur E. Castelot (Paris), Dr. Irving Fisher (Yale), Professor E. J. James (Philadelphia), Professor M. Kovalewsky (Moscow), Dr. Julius Mandello (Buda-Pesth), Professor J. Mavor (Toronto), M. P. Otlet (Brussels), Dr. Joseph Redlich (Vienna), and President F. A. Walker, Hon. F.S.S. (Boston). These and the large number of prominent British economists who were present contributed greatly to the general excellence of the discussions on the various papers read.

On the present occasion there were also two special features in connection with the Section which would of themselves render the Oxford meeting memorable. One of these was the fact that for the first time on record one of the two evening lectures was devoted to a subject connected with economics. On the Monday (13th August), Professor J. S. Nicholson, of Edinburgh, read a paper on "Historical Progress and Ideal Socialism,"⁷ in which he combated socialism as being opposed to all the teachings of history. Excessive taxation was, he pointed out, the cause of the ruin and decay of many nations, and socialism, which presupposed community of property, simply meant a tax of 20s. in the pound on all property. Socialism also meant the suppression of liberty and a return to slavery. Extremes meet, and the extreme met by socialism was anarchy. The other feature of the Oxford meeting which did much to render the meeting of economists of a sociable character, was a dinner, held in the hall of Oriel College, at which the foreign economists were entertained by the English.

Professor C. F. Bastable, M.A., F.S.S., Professor of Political Economy in the University of Dublin, presided over the Section, and the other Officers were as follows: *Vice-Presidents*—Rev. Professor W. Cunningham, D.D., F.S.S.; Professor F. Y. Edgeworth, M.A.,

⁷ Since published by A. and C. Black.

D.C.L., F.S.S.; Sir Charles Fremantle, K.C.B.; Professor J. S. Nicholson, M.A., D.Sc., F.S.S.; R. H. Inglis Palgrave, F.R.S., F.S.S.; L. L. Price, M.A., F.S.S.; Professor H. Sidgwick, Litt.D., F.S.S. *Secretaries*—E. Cannan, M.A., F.S.S.; Professor E. C. K. Gonner, M.A., F.S.S. (*Recorder*); W. A. S. Hewins, M.A., F.S.S.; H. Higgs, LL.B., F.S.S.

The proceedings as usual opened, on Thursday (9th August), with the Address of the President. This will be found printed in full on p. 611.

A vote of thanks to the President was moved by Professor F. Y. Edgeworth (Professor of Political Economy in the University of Oxford, President of the Section in 1889), seconded by President F. A. Walker, and supported by Mr. R. H. Inglis Palgrave (President in 1883).

Other papers read on Thursday were by Professor Edgeworth, on the "Mathematical Theory of International Trade;" by Dr. Irving Fisher, on the "Mechanics of Bimetallism;"⁸ by Mr. H. Higgs, on "Factors of Production;" and Dr. J. Mandello, on "Stock Exchange Taxation." Dr. Fisher exhibited diagrams in which the bimetallic *régime* was figured as a system of hydrostatics by substituting for Jevons' curves reservoirs of water. These reservoirs are three in number, one for money and the other two for gold and silver in the arts respectively. The three being connected the water seeks a common level, and from this example Dr. Fisher deduced a theoretical criterion to distinguish when bimetallism was or was not possible. Dr. Mandello discussed the advantages of taxing transactions on the stock exchange, and gave a brief historical view of such taxation on the continent, notably in Germany and France. He held that stock exchange taxation was necessary, but that it ought only to be carried out with the proviso that no very serious obstacle was offered to the conduct of business. An animated debate followed on Mr. Higgs' and Dr. Mandello's papers, which took the form of a discussion on the possibility of taxing "luck," and to what extent such transactions as those on the stock exchange were "luck" or "foresight."

Friday morning was devoted chiefly to the consideration of the best method of procuring employment for the unemployed. Two papers were read on the subject, the first by the Rev. W. H. Hunt, on "The Church Army and the Unemployed," and the second, entitled simply "The Unemployed," by Mr. Bolton Stuart. The principal interest of these papers was that they recorded what was actually being done to procure employment for those out of work by the Church Army and the Mansion House Committee (of which latter body Mr. Bolton Stuart is Secretary) respectively. Both endeavoured to keep out the loafer and shiftless, and with this view strict discipline had to be enforced. The Church Army appeared to look more to the social side of the question, and endeavoured to provide homes for those whom they aided by finding them employment. The Church Army thus helped some 2,000 people in the year, while quite 50 per cent. were ensured a

⁸ Published in the *Economic Journal*, September, 1894.

genuinely helpful chance of a good start in life. The Mansion House Committee was started mainly to help to find work for many who turned generally to the docks, which was formerly looked upon as the last resource of the unemployed, but where there was no longer room for them, now that so much had been done to make employment there more regular. Allotments were provided at Abbey Mills for those capable of working, while many were emigrated to Canada. A long discussion followed, in which the principal speakers were Professor Mavor, Mr. C. S. Loch, and Canon Barnett, and much stress was laid on the difficulty of eliminating those who were unwilling to work seriously.

The paper by Mr. E. Atkinson (of Boston, U.S.A.), on "Prices, Wages, and the Standard of Value" was, owing to the length of the discussion on the two former papers, taken during the luncheon hour, and the discussion being carried on until two o'clock, the sitting became continuous. He exhibited diagrams, some drawn from his own observations and inquiries, and another from Mr. Carroll D. Wright's recent investigation into wages and cost of production, on which were plotted curves of wages, prices, and the purchasing power of wages in the United States between 1865 and 1890. He called attention to the steady increase in the purchasing power of wages since 1880, when the gold standard was introduced, and compared this with the fluctuations prior to 1879, when paper was inconvertible.

Mr. L. L. Price, in a paper entitled "The Report of the Labour Commission,"⁹ defended the report of the majority who had been content with presenting a summary of opposing views, and recommending minor reforms. Mr. Price drew four main conclusions, which he summarised as follows: (1) a number of experiments have been made in the preservation of industrial peace; (2) in spite of some failures these experiments have been attended by a considerable measure of success; (3) the conditions of success are now ascertained, and consist in organisation; (4) little room is left for the intervention of the State.

Miss Kenward read a paper on "Girl Life in an Industrial Centre," dealing mainly with the morality of factory girls in Birmingham.

On Saturday Mr. C. S. Loch submitted statistics of the numbers and cost of pauperism in England and Wales since 1831, by decades, and exhibited maps of the relative cost and amount of pauperism at each decade. He also submitted similar tables and maps in regard to old-age pauperism. He pointed out that there had been a great decline of child-, able-bodied-, and old-age-pauperism since 1871, not only relatively to population, but absolutely. He attributed the decrease to higher wages, lower prices, and better administration, and showed the relation between wages, prices, and pauperism in the statistical history of several counties. He alluded also to the very arbitrary practice frequently adopted of contrasting the statistics of different unions without regard to historical conditions, the growth of population, &c., and

⁹ Printed in the *Economic Journal*, September, 1894.

submitted a statistical method for the comparison of Poor-law returns.

Mr. C. S. Devas submitted "Proposals for an Agreement on the Terms *Rent* and *Interest*," quoting the writings of various economic authorities in favour of the suggestion, and pointing out the difficulties resulting from this separation: those who took part in the discussion however (Professors Sidgwick and Nicholson and Mr. E. Atkinson) expressed the opinion that the proposed identification was impracticable.

M. Kovalewsky read a paper on "The Economic Results of the Black Death in Italy," of which the following is a summary:—The pestilence of 1348-49 produced all over Europe the economical results it had in England. The depopulation of Europe brought forward the labour question. For the first time it had to be treated, on a large scale, as a question of almost international importance. Without any previous agreement the Governments of France, Aragon, and Castille, as well as the political authorities of independent or semi-dependent cities of Italy and the German Empire, issued ordinances prohibiting idleness, enforcing the obligation of farmers to pay rents, and regulating the wages of labourers and working men. The fall of serfdom, which was almost accomplished in Italy at the end of the thirteenth century (Piedmont and Frioul excepted), created here, centuries before than in France or Germany, a large class of free farmers (*Mezzeria di Toscana, i terziafori di Lombardia, &c.*) and free working men. A regulation of wages appears already in the thirteenth century. Pisa, Mantua, Nice, some Sicilian municipalities, tried to establish a legal standard of wages. Their example was followed at the end of the pestilence by almost every city of Middle Italy. Florence, Sienna, Orvieto, Todi, &c., issued orders and statutes against the enhancement of wages, either according to the labourers and artisans the right to a supplementary pay, not surpassing the third of the wages they got before the pestilence, or totally refusing any increase of remuneration. Venice alone tried to achieve the same end—the lowering of wages—by the way of liberty. Its example was followed by dependent municipalities, such as Treviso or Ragusa. All encouraged immigration, according great facilities to new settlers, admitting them to the crafts, guilds, and to the exercise of commerce. Their endeavours were successful. At the end of the century, notwithstanding several new appearances of the plague, the Republic of St. Marc was repopulated, and the wages fell.

On Monday (13th) the first paper read was Mr. E. Cannan's "Inequality of Local Rates: its Extent, Causes, and Consequences." After considering the extreme intricacy caused by the immense number of different areas due to the overlapping of various kinds of districts, and the differences in the amounts of rates, he classified the chief causes of these different amounts as follows:—(1) Unequal returns from investments and unequal repayments of debt. (2) Unequal services performed for self-supporting persons by the local authorities. (3) Inequalities of situation and circumstances which cause the same services to cost unequal amounts.

(4) Unequal endowments. (5) Unequal voluntary liberality. (6) Unequal cost of certain charges imposed by law on localities, although they do not increase the advantages of a locality as a place of business or residence for self-supporting persons. (7) Inequalities of competence or honesty on the part of the authorities.

Mr. A. W. Flux, in "a Few Remarks on Fifty Years' Accounts of the Bank of England," exhibited diagrams illustrative of the changes connected with the Bank which had taken place since the introduction of the Act of 1844. The *active note circulation*, was, he mentioned, now almost entirely in the hands of the Bank of England, and the total circulation of notes is now less than fifteen years ago; the present annual variation is also more uniform than formerly. *Other deposits* have largely increased, and in this connection Mr. Flux alluded to the necessity of the publication of the amount of bankers' balances, concerning which no information has been given during the last twenty years. He alluded also to the changes in the annual fluctuations of the *public deposits, coin and bullion*, and the *reserve*, concluding that the increase in the amount of the latter was inadequate in comparison with the increase of *total and other* deposits.

Mr. Harold Moore, dealing with "Co-operation in Agriculture," divided the different systems of working land, which had been tried with the view of giving the workers the profits, into four classes: communal farming, co-operative tenancy where the co-operators jointly took the position of ordinary tenants, profit-sharing where the labourers had some share in the management, and profit sharing as a voluntary arrangement made by landowners working their own property. Some such arrangement as this last, by which distinct individual interest was combined with the advantages of co-operation, was, he concluded, the only one practicable.

The afternoon meeting proved to be one of the great attractions of the section. Mr. Sydney Webb, L.C.C., undertook the defence of "The Alleged Economic Heresies of the London County Council." The three chief "heresies" with which the London County Council has been reproached are, (1) that it has adopted as its standard the trade union rate of wages, (2) that it has sought to compel all contractors executing its work to adopt the same rates, (3) that it has, wherever possible, dispensed with the contractor, and performed the necessary work itself. Mr. Webb's argument in favour of the first of these "heresies" was that the wages adopted were the usual wages in the particular trade, as agreed upon by compact between masters and men. The motive of the second (the "fair wages clauses") was that the contractors endeavoured to keep the wages down to the lowest point, and this the Council were endeavouring, from humanitarian considerations, to put a stop to. As regards the action of the Council in directly employing labour to perform the work, Mr. Webb brought figures to show that the estimates of the Council's engineers, and the ultimate actual expenses of the undertakings, were, in most cases, considerably below the lowest estimates sent in by contractors. He further held that the proceedings of the Council in this last respect were by no means so novel as their opponents suggested, as far more

greater undertakings were managed by many municipalities, notably by Birmingham. Finally, he maintained that the present tendency was towards an "integration of processes," by which large firms and companies made on the premises, not only every portion of the article which they ultimately turned out, but also the utensils necessary for such manufacture, buying only the raw material from outside. As an instance of this, he mentioned the railway companies, and many shipbuilding companies. The North Western Railway Company, for example, besides making every part of its locomotives (with one or two rare exceptions), now manufactures its own artificial limbs for those who lost their legs or arms in the company's service, and etches its own designs on the ground glass for the windows of lavatory compartments.

Perhaps the most useful discussion in Section F during the meeting was that on Tuesday morning on the "Report of the Committee on Methods of Economic Training in this and other Countries." The Chairman of this Committee was Professor W. Cunningham, and the Secretary Professor E. C. K. Gonner, the latter of whom had drawn up the Report (except the portion dealing with economic studies in France, which was from the pen of Mr. H. Higgs). The organisation of the study of economics in the United Kingdom is far behind that of most other countries, and the Committee recommend that "economics should be introduced into the honour courses and examinations of the universities in such a manner as to allow students to engage in its *thorough and systematic* study without necessarily going outside the range of degree subjects." Concerning the "position of economics with regard to professional and other curricula," the reports says that, "In most continental countries economics occupies a place more or less prominent in the courses of training and in the examinations through which candidates for the legal profession or the civil service have to pass. In Austria, Hungary, and the three southern States of Germany this connection is very real, and the nature of the study involved very thorough. The same cannot be said with regard to the northern States of the latter empire, where the importance attached to this subject is so slight as to make its inclusion almost nominal. To some extent or in some form it is regarded as a subject obligatory on those preparing for those callings, or, to speak more accurately, for the legal calling and for certain branches of the civil service in Italy, Spain, Sweden, Norway, Denmark, and Switzerland. In Holland and Belgium, while a certain general knowledge only is required for a few posts or branches of the civil service, a very thorough study is incumbent on those qualifying for the higher branch of the legal profession. In both France and Russia it is an integral and necessary portion of the legal curriculum." In the United States the recognition of economics, though quite as general among the population, is "tacit" rather than "positive," *i.e.*, public opinion demanded economic knowledge in those aspiring to prominent positions as statesmen or journalists, and great facilities were accordingly provided for its study in the universities, but it did not enter into State examinations. The Committee add that "not

only would the institution of an examination in economics at some stage of legal degrees and qualifications be advantageous professionally, but the work of those who had enjoyed a legal training would react favourably on the advance of the science. In addition economics should receive a much more important place in the Civil Service Examinations." In the discussion which took place on this report, and in which Dr. Cunningham, Dr. S. Bauer, Dr. J. Mandello, and Professor James, amongst others, took part, considerable emphasis was laid on the advantages of seminaries of economic teaching.

The Report of the Committee on "The Teaching of Science in Elementary Schools" was also presented. These reports will, in future, no longer be submitted to Section F. The morning's business concluded with a paper "On the Relation between Wages and the Numbers Employed in the Coal Mining Industry," by Mr. R. H. Hooker. This is printed in full on p. 627.

In the afternoon the Rev. L. R. Phelps contributed a paper on the "Popular Attitude towards Economics," in which, after alluding to the fall of economics in general estimation during the last quarter of a century, he attributed the change mainly to the desertion of the *à priori* method, and the dislike of the public to exercise their reasoning powers. Mr. J. A. Hobson read a theoretical paper on the "Relation between Wages, Hours, and Productivity of Labour."

The proceedings of the Section terminated with a hearty vote of thanks to the President, proposed by Professor Mavor, and seconded by Professor Irving Fisher.

The meeting of the British Association next year will be held at Ipswich.

IV.—*Statistics of Tea Consumption.* By C. Fox, M.R.C.S., F.S.S., M.S.A., &c.

THE firm of Gow, Wilson, Stanton, and Co. giving us a table on the average annual consumption of tea in different countries in English pounds, it will be of interest and serviceable to inquire as to the increase or otherwise which it shows, having regard to the excessive use of this beverage in our own country. It is recently admitted, I believe, that dyspepsia is becoming almost a national complaint and of exceeding commonness, and also in the observation of all who know the poorer classes especially, that tea is used with very much too great frequency—in the latter cases often, *ex. gr.*, at each meal, or continually throughout the day; whence it is concluded to be, perhaps, the predominant influence in the so-general gastric disorders of the people.

These statistics, which the *Journal of the Society of Arts* reproduces, and which are noticed at the end of this paper in detail, show an increase in the consumption of tea *per head* in the United Kingdom, although this is less rapid in 1892—the last year for which it is stated—than in the year preceding. Until then it had steadily increased.

To the individual of the population the ratio is nearly or quite as follows, for 1890 :—

1890..... 5'12 | 1891..... 5'34 | 1892..... 5'46,
giving a difference

Between 1890 and 1891 of..... 0'22
„ '91 „ '92 „..... 0'12.

It is satisfactory to observe that the augmented consumption by us of this article proves a decline during the last year or two—as now shown by those who have the best opportunity and right to speak.

There can be little doubt that tea-drinking is a form, in this day, of Intemperance—a (1) national and a (2) female intoxication, only second to that of strong drink—and in some respects even more injurious perhaps. In France the consumption of tea *per* head was, in 1885-89, but 0'03 lb. (no increase on the last estimate), against our 4'7, and in Germany only 0'08! Of all the continental nations, the highest figure was (in those years) 1'16 lbs. in Holland, that country only reaching the amount of 1 lb. per head. This will show how much tea-drinking is a *national* proclivity in England.

In actual quantity, the following countries consume, at the last return given us, as hereunder :—

	lbs.
Russia	71,592,336
Germany	5,668,688
France	1,452,173
Spain	136,077.

Spain has the lowest consumption per head of any European country; it was in 1885-89 at the rate of but 0'01 lb. *per* head of the population, and has decreased since. Large numbers consequently can never be in the use of tea there.

In the following countries I find what is probably a steady rise in the employment of it shown, viz., Great Britain, Australia, Newfoundland, Germany, Sweden, Austria-Hungary; and in the following there appears to have been increased consumption in the last returns after some fall, viz., Switzerland and the Cape Colony. It is possible a corresponding feature in the state of the population may explain this, should such have been the fact—which is not probable.

We may remark, in like manner by the simple facts of actual consumption, an apparent diminution of the use of tea in the case of the following:—New Zealand, Natal, and Spain, while in Russia it is thus by comparison with the amount in 1890, though an increase on that of 1891.

The countries which have a higher rate of tea-consumption than our own are *but three*, and presented the following proportions in 1889 :—

	lbs.
Australia (highest)	7'66 per head
New Zealand	7'19 „
Tasmania (<i>circ.</i>)	6'37 „

One other reaches the standard of 4, viz., Newfoundland, and

next to this comes Canada. Even the English-speaking United States had a ratio only of 1·34 *per head*.

The above facts, though I have been unable to bring them to accuracy in the case of the *variation* in other countries than the United Kingdom, for want of collating the returns with the varying populations during the same time, have much interest, and may—in the presence of so injurious a habit of tea-drinking and prevalence of dyspepsia in Great Britain as we have to recognise—be useful. It is, indeed, said with reason that to this excess is attributable very much of the lunacy in England which now presents so grave and practical a problem by its alarming increase as deserves the most earnest consideration and inquiry into those conditions of life to which it may be due. While strong drink fills our gaols to overflowing, tea is felt to be doing much to overstock our asylums in this age of haste, mental tension, and overstrain.

I append the table referred to, since, being more recent, its data may be taken in preference to those given in the Journal six months ago.

Average Annual Consumption of Tea in English Pounds.

	1880-84.	Per Head of Population.	1885-89.	Per Head of Population.	1890.	1891.	1892.
Australia	18,200,000	7·66	21,488,920	7·66	21,253,186	23,262,413	24,009,091
New Zealand	3,902,000	7·23	4,337,453	7·19	3,849,105	4,103,190	3,703,716
Tasmania (about)....	699,500	5·35	907,035	6·37	977,864	931,207	1,099,188
Great Britain	170,733,600	4·70	183,153,080	4·91	193,949,452	202,396,631	207,055,679
Newfoundland	824,000	4·38	852,073	4·41	871,281	912,600	920,000
Canada	16,600,000	3·69	18,849,450	3·90	18,455,475	17,990,630	22,718,181
United States	71,175,314	1·20	79,173,100	1·34	83,494,956	82,395,924	89,610,741
Holland	4,860,373	1·16	5,173,694	1·16	5,615,763	5,907,374	5,876,786
Cape Colony	1,128,500	0·90	1,169,892	0·85	1,464,109	1,167,447	1,885,734
Natal	327,300	0·76	540,832	1·13	520,787	340,682	312,332
Russia	62,408,500	0·61	70,543,866	0·77	73,661,760	67,228,813	71,592,336
Denmark	733,800	0·37	798,306	0·37	752,957	860,782	912,815
Uruguay, 1884	176,930	0·34	203,419	0·29	174,855	126,835	171,745
Argentina, 1883-84 ..	900,000	0·30	1,118,135	0·28	1,121,960	1,200,000	1,300,000
Portugal	561,000	0·12	589,136	0·13	642,675	533,051	546,567
Switzerland, 1880 } and 1882	292,000	0·10	287,274	0·10	185,158	414,455	431,007
Norway	170,400	0·09	183,082	0·10	196,548	189,169	212,224
Germany	3,113,500	0·07	3,975,882	0·08	4,595,340	5,018,508	5,668,688
Morocco (about)	345,000	0·06	744,873	0·10	856,750	1,086,650	1,081,200
Belgium, 1883-84 ..	155,896	0·03	135,379	0·02	127,135	131,169	137,158
Sweden, 1880-83	139,250	0·03	198,796	0·04	259,196	282,819	290,000
France, 1882	1,029,561	0·03	1,168,317	0·03	1,355,663	1,351,587	1,452,173
Austria-Hungary, } 1883-84	739,500	0·02	1,071,925	0·03	1,263,889	1,405,352	1,594,703
Bulgaria, 1884	33,669	0·02	63,008	0·02	123,332	108,345	144,344
Spain, 1884	136,000	0·01	224,720	0·01	201,101	168,971	136,077
Total of all tea....	359,385,593	—	396,951,647	—	415,970,297	419,514,604	412,862,485
British grown	53,000,000	—	94,000,000	—	150,000,000	170,000,000	193,000,000
China, &c., grown	306,385,593	—	302,951,647	—	265,970,297	249,514,604	249,862,485

V.—*Census of Portugal, 1890.*

THE following was the population of the various districts of Portugal in 1878 and 1890:—

Districts.	Population.		Increase or Decrease.	
	1878.	1890.	Absolute.	Per Cent.
Aveiro	270,940	287,551	+ 16,611	+ 6'1
Beja	151,672	160,899	+ 9,227	+ 6'1
Braga	330,111	337,178	+ 7,067	+ 2'1
Bragança	175,617	179,692	+ 4,075	+ 2'3
Castello Branco	180,206	204,537	+ 24,341	+ 13'5
Coimbra	308,854	321,000	+ 12,146	+ 3'9
Evora	114,777	118,428	+ 3,651	+ 3'2
Faro	205,901	228,551	+ 22,650	+ 11'0
Guarda	238,061	250,758	+ 12,697	+ 5'3
Leiria	199,787	215,912	+ 16,125	+ 8'1
Lisbon	523,396	617,191	+ 93,795	+ 17'9
Portalegre.....	108,054	113,727	+ 5,673	+ 5'2
Porto.....	472,703	550,391	+ 77,688	+ 16'4
Santarem	228,362	258,298	+ 29,936	+ 13'0
Vianna	212,580	210,787	— 1,793	— 0'8
Villa-Real.....	234,844	239,225	+ 4,381	+ 1'9
Vizeu.....	392,686	397,988	+ 7,302	+ 1'9
Continent	4,348,551	4,692,123	+ 343,572	+ 7'9
Angra	72,202	71,804	— 398	— 0'5
Horta	63,639	58,928	— 4,711	— 7'4
Ponta Delgada.....	128,511	124,779	— 3,732	— 2'9
Funchal	132,221	134,623	+ 2,402	+ 1'8
Azores and Madeira } Islands	396,573	390,134	— 6,439	— 1'6
Total	4,745,124	5,082,257	+ 337,133	+ 7'1

VI.—*Notes on Economical and Statistical Works.*

L'Agriculture aux États-Unis. Par É. Levasseur. Paris: Chamerot et Renouard, 1894.

The subject of this work and the name of its author alike afford unimpeachable testimony to its importance. At a time of severe, if not unexampled, depression in the Old World, it is of great value to know the precise circumstances of the agriculture of the New. Few more promising avenues to that exact knowledge could be discovered than that presented by the wide learning and trained skill of the eminent French statistician, whose name appears on the title-page of this opportune publication, issued under the auspices of the French National Society of Agriculture. M. Levasseur's remarks are prefaced by a note from the secretary of

the society, M. de Vilmorin, in which a summary view is furnished of American agriculture. M. de Vilmorin observes with truth that the vast area of agricultural land, and the large proportion of the population, amounting to about one-half, engaged in the industry, render the States beyond dispute the greatest agricultural country in the world—a country also which is in the very van of progress in the matter of agricultural machinery and of the means afforded for agricultural instruction. At present, too, scarcely a third of the total extent of the territory is under cultivation. M. Levasseur's remarks, which follow this prefatory note, are given under eleven heads. In the first chapter he discusses the nature and trustworthiness of the statistical information available, in the seven succeeding chapters he passes in review the chief features of the rural economy, in two further chapters he examines the characteristics of the internal and foreign trade, and in a concluding chapter he furnishes a *résumé* of the book.

The sources of statistical information are fourfold. In the first place are the estimates of the areas under production, and of the values, made by the assessors of taxes. In the second place are the inquiries conducted, and the publications issued, by the various bureaus of labour and agriculture in the different States, in the third place M. Levasseur puts the data contained in the Census, and in the last the information published by the Department of Agriculture. These various sources of information are arranged by him in an ascending order of merit. The returns of the tax assessors are liable to the disturbing influence of local politics and passing economic interests. The publications of the State bureaus are vitiated by a comparative absence of concern on the part of the States, which are more largely manufacturing in character, and by a lax regard for accuracy among the majority of the agricultural States. The figures thus obtained in the East are, for example, generally less than those of the Census, and the figures of the West tend to exaggerate the crops and to minimise the areas. The Census itself is only taken at intervals of ten years, and its results differ, sometimes widely, from those of the Department of Agriculture, which issues its publications year by year. Some striking cases of such difference are noted by M. Levasseur. The two censuses of 1870 and 1880 enjoy a superior reputation to that of preceding censuses in consequence of the ability of the Superintendent, General Walker, and yet the census of 1870 omitted 18 per cent. of the cotton crop, while the census of 1880 recorded 47 millions of pigs against a record by the Department of Agriculture of 34 millions. The information, then, furnished by the Department affords the most reliable material for establishing definite conclusions.

In his second chapter, M. Levasseur proceeds to pass under review the chief features of the rural economy of the States. He contrasts the farmer of the past, with his primitive mode of life in the North, and the large plantations of the South, with the farmer of to-day, who, in the East and the central districts, enjoys the luxuries of an advanced civilisation, and even in the far West is able to surround himself with comfortable furniture, and to use costly and elaborate machinery. He then gives an account of the

various kinds of agricultural associations and societies, including the well-known "Grange," which, in 1875, had a million and a half of adherents and in the single year of 1893 founded 13,000 subordinate Granges. Primarily eschewing politics, and devoting itself to the intellectual, moral and social advancement of the agricultural interest, it subsequently became embroiled in political strife. The progress of American agricultural machinery, which M. Levasseur next proceeds to describe, is known and recognised throughout the world. The rise of agricultural wages during the last fifty years has, he maintains, been considerable, and he puts the average, at the present time, for those who receive board at 12 dollars, 54 cents per month, and for those who are not boarded, at 18 dollars 60 cents, and he notes that in America the cost of board is thus reckoned as but a third of the expenses of a working family. The value of land is about seven times as great in France as in the States, although the difference in productivity is as 14 is to 11. The reason is to be found in the great abundance of land offered for occupation. The average size of the farms seems to have diminished from 1850 to 1880, and to have slightly increased from 1880 to 1890—from 134 acres, that is, to 137—but the diminution is really confined to the South, where, since the suppression of slavery, a number of small cultivators rent pieces of land too tiny to afford a livelihood without at the same time working as hired labourers for their old masters. In the other parts of the country the average size has grown from 102 to 114 acres; but, although some tendency to concentration can be discerned, it is only moderate holdings which are taking the place of "la petite culture." There is also a tendency revealed by the last census to substitute tenancy for occupying ownership, the percentage of the latter having fallen from 75·62 in 1880 to 67·70 in 1890, but it is in the South again that this change is marked, and the number of hired labourers was, in 1880, only 79 to each hundred of working farmers.

The somewhat detailed account, which we have given of the first two chapters of M. Levasseur's work, will afford a sample of the abundance of interesting material which he has collected and arranged; and the limits of our space compel us to pass with greater rapidity over his other chapters. In the third he furnishes statistics of the different crops raised in the States. In the fourth he gives an account of the fruit cultivation, and in the fifth of the woods and forests. In his sixth chapter he furnishes statistics of the live stock, and in his seventh he examines the chief characteristics of soil, climate, and products, into which the States may be divided for agricultural purposes. In New England, which forms the first of these divisions, there are, as in the Old World, complaints of farms abandoned owing to the competition of the West, and there are also signs, as in the Old World, of the substitution for cereals of products, such as fruit and vegetables, more suited to the requirements of a denser population residing in cities, and less adapted to conveyance from a distance. The second region is that of the Central Atlantic, and the third that of the South Atlantic seaboard. In the latter the system of slavery, which

formerly prevailed, has left its traces behind. In the fourth region, which comprises the States of Florida, Alabama, Mississippi, Louisiana, Texas, and Arkansas, the climate is hot and the rain abundant; there are vast tracts, covered with wood or marsh, which are still uncultivated; metayers abound, as they do also in the South Atlantic district, and, as in that district, they are generally poor and inclined to idleness, while usury exercises its discouraging influence. The prevailing produce, which is raised, is cotton. With the fifth region we pass further west, and include Tennessee, Kentucky, and Virginia. With the sixth region we come to the central plain. Here the proportion of the productive land to the total area is greater than in any other district, and the average of productivity exceeds the general average for the States as a whole. This is the granary of America. Of the 1,628 million bushels of maize, the principal crop raised in the States, 1,031 millions come from here; and of the 515 million bushels of wheat, 248 are produced by this region. In the seventh region the plains of the North are placed, including the States of Wisconsin, Minnesota, and the two Dakotas. This is a cold district with a long and hard winter, but the warm weather succeeds the cold without a break, and vegetation is pushed on with great rapidity. The level character of the soil permits of the employment of machines, and ensures the advantage that not an acre is lost. The fall in the price of corn has led to the substitution of some other forms of produce, but the complaints of the fall are general. In Dakota are to be found some very large farms, the one best known being the Dalrymple farm, with an acreage of 75,000. In the eighth region, that of the Cordilleras, the great want is that of water, and only a small part of the soil is under cultivation. The ninth and last region is that of the Pacific seaboard.

In the following chapter M. Levasseur describes the various modes of acquiring land, and investigates the question of mortgages, which has recently attracted no little attention on this side of the Atlantic, and has formed the subject of a special inquiry in the last American census. There is no necessity to inform the readers of this *Journal* of the results reached in this inquiry, as they have been summarised in a paper read before the Society by Mr. Porter, the superintendent of the census. It will suffice to say that they conflict with some popular notions, and tend to show that the bulk of the mortgages are connected with urban rather than rural property, and that the burden is less in comparison with the value of the property on which it rests than has been generally supposed. In his two following chapters M. Levasseur describes the general features of the inland and foreign agricultural trade of the States. The methods for storing grain, and for transporting it from the farm to the market, in America itself are explained; and the elaborate organisation of the trade at Chicago, with its elevators, its stockyards, and its packing houses, is set forth with graphic detail. The circumstances of the external trade are then investigated. The amount of wheat exported has grown from a proportion of 2 per cent. of the total crop in 1860 to 40 per cent.

in 1879-80, and from that it has fallen to 21 per cent. in 1888-89, although the abundant harvest of 1891-92 raised the proportion again to nearly the percentage of 1879-80, the exact figure being 37 per cent. The exportation of cotton has increased from about 1,000 million pounds in 1870 to over 2,000 in 1893. The total value of the exports of dead animals in 1893 was 171 million dollars, and the number of live animals exported was 358,000. The principal purchaser of these exports is England. The cost of transportation across the sea, like the cost of transportation within the States, has fallen, but in a less degree and with less regularity. M. Levasseur thinks that the day is distant when the domestic consumption of America itself will leave no surplus for exportation. In his final chapter he furnishes a *résumé* of the main conclusions which he has reached, and in an appendix he supplies illustrations of his statistics by means of that graphic method, of which he is so competent and acknowledged an exponent.

Co-operative Production. By Benjamin Jones. Oxford: The Clarendon Press, 1894.

In these two volumes Mr. Jones deals with a subject of great interest, which he is especially qualified to handle. For not only does he enjoy the benefit of a long experience of the practical working of the co-operative movement in its most successful phases but he has ransacked with untiring diligence the material available for the history of the special, and not altogether successful, phase with which he deals in the present book. Much of that material is to be found in out of the way corners, and might be speedily forgotten, had it not been given a more permanent place in Mr. Jones's pages. That his treatment is lengthy may be accounted a drawback, but it is partly due to the minute detail with which he describes the history of the various attempts at co-operative production, and to the painstaking care with which he shows the precise particular points in which they have failed. That his judgment upon the schemes, the story of which he tells, is generally unfavourable may be attributed to the intimate knowledge of the real difficulties of the problem which he has gained from actual experience of co-operative work. That he uses the term "co-operative production" in a comprehensive sense, to cover, not merely such enterprises of working men sharing among themselves the profits of the undertaking as are commonly intended by the term, but also the productive departments of the Wholesale Society, which in England at least does not recognise as desirable the practice of giving a share of the profits to the workmen, and, by a yet further extension, the cotton spinning companies of Oldham, which are to all intents and purposes joint stock companies of the ordinary type, save that the capital invested in them is largely owned by working men, and that they have a hereditary connection with the main co-operative movement—that he uses the term in this wide sense may have led to undue magnitude in the scale of his treatment, and to some misapprehension on the part of his readers of the points really involved in the argument. But Mr. Jones is not only or primarily responsible for this lax and confusing interpretation. Of the com-

prehensiveness of his account there can be no question, and its accuracy is beyond impeachment. The subject is first considered chronologically, and then trade by trade. The story is undoubtedly discouraging to those who regard as a panacea co-operative production (in the more limited and accurate sense of the words, as implying a system of sharing profits among the actual workmen engaged in an undertaking). But, to those who look upon it as one out of many methods of social reform, Mr. Jones's book is not devoid of hope; and both classes of the community will, or should be, grateful for having the actual facts placed before them.

The Evolution of Modern Capitalism. A Study of Machine Production. By John A. Hobson. London: Walter Scott, 1894.

This is an interesting, if not always convincing, book. Mr. Hobson is a writer of independent opinions, and these appear most notably in his chapter on "machinery and industrial depression," where he returns to the thesis propounded in an earlier work, that spending is necessary and, in a true economic sense, "good for trade," and that saving may be injurious to the community. We are not convinced by his arguments, either here or in his earlier book, and we think that the difference between him and the more orthodox economists is largely a matter of words and definitions. But we frankly acknowledge that his reasoning on the point is marked by considerable subtlety. In the other parts of his book he displays equal independence, but his conclusions are less disputable, and he contrives to throw some new light on old questions. The gradual stages of the "epoch-making" inventions of the industrial revolution, and the fact that this change was a steady evolution rather than a sudden revolution, might be cited as illustrations, while his treatment of monopolies, and of the connection of wages with efficiency of labour, affords an example of his jealous desire to attain the "dry light" of unbiassed truth. He commences his book by sketching the condition of industry before machinery, which he regards as the inseparable sign and the inevitable outcome of the evolution of capitalism. He then reviews the successive stages in the development of machine industry, and notes the main features of the new industrial structure, which has followed on that development, and he then proceeds to give more detailed attention to some special consequences of machine production. It has, he holds, led directly to efforts to avoid the disagreeable incidents of unfettered competition by the institution of trusts and other combinations. It has produced depressions, for which the true remedy is spending as opposed to saving. It has affected the efficiency of labour, the regularity of employment, and the employment of women. It has been closely connected with the encroachment of urban on rural life, and it may produce a larger substitution of collectivist methods for individualistic organisation. All these topics Mr. Hobson discusses with knowledge and ability, and his book will interest, where it does not convince, the social inquirer.

Report by Mr. D. F. Schloss on Profit-Sharing. Board of Trade (Labour Department). London: Eyre and Spottiswoode, 1894.

The Labour Department of the Board of Trade has rendered a useful service to economic study by the publication of this report. It contains, arranged chronologically, a collection of the various experiments which have been made in the direction of profit-sharing, together with the views, where it has been possible to obtain them, of the institutors of such experiments, on the success or failure which has attended their efforts. Mr. Schloss commences by carefully distinguishing the precise subject which he is examining. He separates "profit-sharing" from stock-holding by employees, from premiums given on production, from the share system, which prevails largely in the fishing industry, and from industrial co-operation, where a bonus on labour is sometimes given. He then proceeds to trace year by year the instances of true profit-sharing, and he follows this detailed account with an epitome of the leading facts and figures, and with some general observations on the present position of the question. The total number of cases described amounts to 165, of which 101 have still some such system in force, 51 have abandoned it, and 4 have tried to introduce it. Of the remaining 9, in 7 cases bonus-giving as distinguished from profit-sharing is found, and in two others stock-holding by employees. A movement in favour of the system was felt in 1865, but, Mr. Schloss states, "wore itself out by the end of 1867." The tendency reappeared in 1873 and then again in 1880, until, in 1889 and 1890, "remarkable activity" was manifested. The number of industries, in which it has been introduced, is large and varied, but the time, during which the experiments have as yet been tested, is, in the majority of cases, but brief. The details of the different methods, which have been adopted, are very varied. But it is noteworthy that, although foreign experiments have attracted the greatest amount of attention from economic writers, yet, as Mr. Schloss states in his general observations, "not only is the total number of profit-sharing experiments (past and present) much larger in this Empire than in any other country, but the number of our existing profit-sharing firms is greater than that of which any other country in the world can boast." Of this material for study the Labour Department has, in the report before us, furnished a trustworthy account.

Progressive Taxation in Theory and Practice. By Edwin R. A. Seligman. American Economic Association, 1894.

The Theory of Transportation. By Charles H. Cooley. American Economic Association, 1894.

The series of publications, to which these two monographs belong, comprises a quantity of material of interest and value for the economic student; and the two particular volumes before us may well claim a place in this category. The question, with which the first deals, is one of immediate interest in view of the recent budget; and Professor Seligman, by his previous writings on kindred topics, has amply demonstrated his competence to accord a scientific treatment to it. He first begins by defining his terms,

and he shows how the genus of graduation may be divided into the species, not always distinguished by other writers, of progressive, regressive, and degressive graduation. Of these the first appears where the rate of taxation increases as the income or property taxed itself increases, in the second case the rate decreases, and in the third the rate, starting from a fixed point, decreases not upwards but downwards. This was and is the case with our own income tax, while the new death duties illustrate progressive taxation strictly so-called. Dr. Seligman then reviews the history of the question, and shows that, whether the tendency deserve the approbation or the censure of economists, it is undoubtedly becoming more marked. From the history he proceeds to the theory. He dismisses briefly the socialistic theory, which urges that in the matter of taxation purely fiscal considerations must be subordinated to the distinct and definite promotion of social aims, and that taxation must be deliberately used as an engine of distribution. Akin to the socialistic theory is the theory, which holds that progressive taxation finds its justification in the compensation due from the State for inequalities in wealth which it has been consciously or unconsciously instrumental in creating. The third theory, which regards taxation as a payment for services rendered or benefits received, leads, on a superficial view, to proportional taxation and then conducts to progressive and non-proportional taxation. The fourth and final theory—that of faculty—also leads to proportional, to degressive, and to progressive taxation. Dr. Seligman shows that such are the natural and logical tendencies of these various views, and that the actual practice of writers holding the tenets has illustrated the tendencies. In a concluding chapter to this part of his book, he maintains that progressive taxation is supported by theory, but in his third part he allows that great difficulties attend its application to American practice. His book will, we think, reward the careful study of students and politicians; for he brings the “dry light” of science to bear on matters of current controversy.

Dr. Cooley's qualification for the task, which he has essayed, consists in the fact that he occupied the important position of Chief of the Transportation Division of the recent census; and he also considers questions of practical interest in the light of scientific reasoning. His aim, as he states in his preface, is to “write a theory of transportation from a sociological standpoint.” He first considers the question on its physical side, and traces the successive development of transportation by land and by water. He then turns to the political and social side, and shows how, when the military aspect of society was predominant, the question of transportation was regarded from the standpoint of military needs, and how, as the military side gave way before the political, new considerations arose, and, with the growth of industry, the economic organisation of society became actively concerned in the question. He devotes an interesting chapter to the “location of cities,” which, he points out, have a tendency to come into being where there is a “break” in transportation, and he discusses with scientific freedom from bias the vexed question of rates and

charges. We do not think that the subject has been considered as a whole before from the standpoint from which Dr. Cooley regards it, and he seems to us to have attained no small measure of success in his endeavour to realise the aim he has set before him. The great service rendered by the American Economic Association in these various monographs makes us once more regret that we have as yet no similar machinery in operation in this country.

Notizie sulle Condizioni Industriali della Provincia in Milano. Di Leopoldo Sabbatini. Milano: Ulrico Hoepli, 1893.

This statistical study, which is published under the auspices of the Italian Statistical Department, and apparently forms part of a comprehensive programme which is eventually to comprise the whole of the Italian Kingdom, is devoted to the district of Milan. Dr. Sabbatini seems to have executed his task with diligence and ability, and, as the result, we have a picture of the district in all those aspects which admit of statistical presentation. In the first part of the work, the area, the population and its movements, and the emigration to the western world, the educational, postal and telegraph statistics, the finances of the province and its various sources of revenue, the banking and railway statistics, are presented and examined. In the second part of the work the various industries of the province receive detailed consideration under their separate headings. The whole book furnishes an exhaustive account of the district with which it deals.

Die Entwicklung der Australischen Eisenbahnpolitik. Von Dr. Moritz Kandt. Berlin: Hans Mamroth, 1894.

This volume deals with a subject of somewhat limited extent with all the thoroughness which is characteristic of German research. The bibliography, which is prefixed, indicates the wide area which the author has traversed in the collection of material, and the systematic manner, in which he traces the history of the railway development of Australia in his different chapters, demonstrates the use which he has made of this material. Whether it is worth the while of a student to investigate with such minuteness such a fragment of railway history may perhaps suggest itself to the English reader, but that the subject is treated with exhaustive erudition cannot be disputed. Dr. Kandt prefixes to his history an introduction on the problems of railway politics in their theoretical and practical aspects, and that he is qualified to deal with such problems the length of those parts of the bibliography, which refer to the more general side of the question, are sufficient to prove.

Handwörterbuch der Staatswissenschaften. Herausgegeben von Dr. J. Conrad, Dr. L. Elster, Dr. W. Lexis, Dr. Edg. Loening. Jena: Gustav Fischer, 1890-94.

By the publication of the six volumes, of which the work before us consists, Dr. Conrad and his colleagues may congratulate themselves on having brought to a successful issue a task of great difficulty, and of no less importance. And they may perhaps

especially congratulate themselves on the fact that they have overcome one of the most serious difficulties confronting such a vast undertaking. They have completed it within the comparatively narrow space of five years. The first of the volumes bears the date of 1890, and the last that of 1894. To have issued within this time half a dozen volumes of the bulk of those before us, containing on the average some thousand pages of closely printed matter on such a variety of topics, is in itself a considerable achievement; and the simultaneous production in the three countries of Germany, France, and England of publications, which may all be brought under the generic name of dictionaries of Political Economy, is not the least encouraging sign of the activity with which the study of economics is now being prosecuted. Dr. Conrad's dictionary naturally bears traces of its distinctive origin, and we may be allowed to say that its strength appears to us to lie on the historical rather than the theoretical side. But the list of contributors contains not a few names eminent in the economic world, and the scheme of the dictionary, as set forth in the preface, is liberal in spirit and comprehensive in aim. Of the four editors, three are professors of Economics, and the other is a professor, as we should call him, of Jurisprudence. Among the contributors we may perhaps select—although selection may be invidious—the names of Dr. Bauer, Dr. Brentano, Dr. Gustav Cohn, Dr. Hasbach, Dr. Inama-Sternegg, Dr. Juraschek, Dr. Mayr, Dr. Philippovich, Dr. Gustav Schmoller, and Dr. Wieser. Nor is it merely the assistance of German-speaking economists and statisticians which has been enlisted, but we find also French writers, such as MM. Gide and Raffalovich, Scandinavians, such as Professors Scharling and Westergaard, Italians, such as Dr. Bodio and Dr. Ferraris, besides Americans and our own countrymen. If we take such an article, for example, as that on legislation for the protection of workmen, we discover that the treatment of the subject for Austria is intrusted to a Viennese, and for Hungary to a professor from Buda-Pesth. Dr. Bücher, of Bale, deals with Switzerland, and the Netherlands, Denmark, Sweden and Norway, Russia, and the United States are similarly handled by writers belonging to the countries of which they treat. Great Britain, France, Belgium, and Italy, on the other hand, are discussed by German writers. But English writers are not without representatives. Mr. Bonar, for instance, is intrusted with articles on Defoe and on Malthus, Mr. Elliott writes on the Income Tax, and the names of Professors Gonner and Ingram appear in the list of contributors. In spite, however, of such contributions, we cannot help thinking that the part of the dictionary, of which we are best able and most disposed to judge—that relating to our own country—is not free from defects. It may perhaps be questioned whether it is wise to introduce at all into such a work accounts of writers still living, even if they are confined to the colourless record of the various stages of their career, and the enumeration of their works, of which the biographical notices in Dr. Conrad's dictionary mainly consist. But, if living writers are introduced,

we do not know on what principle of selection Dr. Ely of America should be included, and Professor Sidgwick of our own country, should be excluded. Nor again do we wish for a moment to impeach the competence of such writers as Dr. Brentano to deal with such a subject as the history of labour associations in England; but it certainly appears to us that the editors have been better able to avail themselves of the services of writers belonging to other countries in treating of subjects, or branches of subjects, specially relating to those countries, than they have succeeded in accomplishing in the case of our own. This may indeed be a fault, not on the part of the editors, who seem to have discharged their onerous duties with admirable diligence and impartiality, but on the part of English writers, unable, in consequence of other engagements, or unwilling to contribute. But whatever be the cause, the effect remains that some of the articles dealing with English matters appear to us to betray a want of proportion, if not a defect of knowledge. This is especially evident perhaps in the references to books in the bibliography following the accounts of English writers such as Jevons, Ricardo, and Mill. But such a failing is perhaps almost inevitable, and many of the bibliographies seem to us to be admirable alike in conception and in execution. Many of the articles also are treated by acknowledged authorities on their special subjects. Dr. Böhm Bawerk writes on Capital, Dr. Engels (whom we may claim as an English resident) on Karl Marx, and Professor Ingram on Cliffe Leslie; and those articles, which are unsigned, and therefore rest on the responsibility of the editors, seem as carefully written as those for which the signature of an individual writer fastens the responsibility on a single person. We can hardly offer a more flattering compliment to Dr. Conrad and his co-editors than to say that we believe that a place is reserved for their dictionary in the library of the student, who already possesses, or proposes to possess, the completed French dictionary, and the unfinished undertaking on which Mr. Inglis Palgrave is now actively engaged in our own country.

Statistical and Economical Articles in Recent Periodicals.

UNITED KINGDOM—

Economic Journal. Vol. iv, No. 15, September, 1894—

The Annual Meeting of the Association: Political Economy and Journalism: *Prof. J. S. Nicholson.* Ricardo in Parliament (Part II): *Edwin Cannan.* Theory of International Value (Part II): *Prof. F. Y. Edgeworth.* The Report of the Labour Commission: *L. L. Price.* The Commercial Supremacy of Great Britain (Part I): *A. W. Flux.* Mr. Charles Booth on the Aged Poor: *C. S. Loch.*

UNITED KINGDOM—*Contd.*

Economic Review. Vol. iv, No. 4, October, 1894—

The Co-operative Ideal: Rt. Rev. Lord Bishop of Durham.

Compensation and the Licensing Question: J. J. Cockshott.

Prediction as a Test in Political Economy: W. D. McDonnell.

The Plea for a Living Wage: Rev. L. R. Phelps.

UNITED STATES—

Annals of the American Academy of Political and Social Science—

Vol. v, No. 2, September, 1894—

The Ultimate Standard of Value: E. von Böhm-Bawerk.

Relation of Labor Organisations to Trade Instruction:

E. W. Bemis. Mortgage Banking in Russia: D. M.

Frederiksen.

Supplement, September, 1894—

Constitution of the Kingdom of Prussia, translated and supplied with an Introduction and Notes: J. H. Robinson.

Vol. v, No. 3, November, 1894—

Why had Roscher so little influence in England?: W.

Cunningham. Reasonable Railway Rates: H. T. Newcomb.

Economic Function of Women: E. T. Devine. Relief

work in the Dells Memorial Institute: H. S. Dudley.

Supplement, November, 1894—

Constitution of the Kingdom of Italy, translated and supplied with an Introduction and Notes: S. M. Lindsay and

L. S. Rowe.

Journal of Political Economy. Vol. ii, No. 4, September, 1894—

California Breadstuffs: H. Davis. Gold and Silver in Santo

Domingo: J. L. Laughlin. The Formula of Sacrifice:

H. J. Davenport.

Political Science Quarterly. Vol. ix, No. 3, September, 1894—

New York City and the State: A. C. Bernheim. American

Administrative Law: E. Freund. Assimilation of Nation-

alities: Prof. R. Mayo-Smith. New Wealth: W. Smart.

Capitalistic Monopolies: Prof. J. W. Jenks.

Quarterly Journal of Economics. Vol. ix, No. 1, October, 1894—

The Wages Fund doctrine at the hands of the German Econo-

mists: F. W. Taussig. The New Income Tax: C. F. Dunbar.

Mortgage Banking in Germany: D. M. Frederiksen.

Yale Review. Vol. iii, No. 3, November, 1894—

Recent tendencies in Economic Literature: A. T. Hadley.

The Connecticut Intestacy Law: C. M. Andrews.

FRANCE—

Annales de l'Ecole Libre des Sciences Politiques. No. 5, September, 1894—

La question tchèque: L. Pinkas. L'Evolution industrielle

de l'Inde: H. Brenier.

Journal des Economistes—

September, 1894—

Le Capital (*concluded in the October number*): G. du Puynode.

La Question des noirs aux Etats-Unis (*suite et fin*):

G. N. Tricoche. La journée de huit heures: L. R.

FRANCE—*Contd.*

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November, 1894—

Le Socialisme d'Etat: *L. Say*. Les Idées économiques de M. de Caprivi: *A. Raffalovich*.

Journal de la Société de Statistique de Paris—

No. 10. October, 1894—

Les Opérations du Mont-de-piété de Paris à différentes époques, depuis sa création (1777): *E. Duval*. Les Statistiques médicales pour l'armée de mer: *A. de Malarce*.

No. 11. November, 1894—

Statistique agricole des Etats-Unis: *Levasseur*. Le Denombrement des étrangers en France: *V. Turquan*.

La Réforme Sociale—

No. 90. 16th September, 1894—

La Réforme des Impôts: *E. Cohen*.

No. 91. 1st October, 1894—

Les moyens de salut: quelques pages oubliées: *F. Le Play*. Monographie d'un grand atelier: La papeterie de Monfourat (Gironde) et ses œuvres patronales: *L. Champion*.

No. 92. 16th October, 1894—

L'œuvre nouvelle. Le comité de défense sociale: L'expansion de l'Allemagne dans les pays d'outremer: *G. Blondel*. L'assistance par le travail dans la ville de Paris: *L. Rivière*.

No. 93. 1st November, 1894—

Les projets de réglementation du contrat de travail en Belgique: *Ch. Dejace*. Les Socialistes et les profits du capital dans l'industrie: *Hubert-Valleroux*. L'Institution des biens de famille en Italie: *Prof. S. Spoto*.

No. 94. 16th November, 1894—

L'Assurance contre le chômage involontaire: *E. Rostand*. Le morcellement en France avant le xix^e siècle: *A. des Cilleuls*.

No. 95. 1st December, 1894—

Les réformes communales. Les fonctionnaires: *O. Pyfferoen*.

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L'Homestead en Amérique: *E. Levasseur*. La première statistique des sociétés co-opératives de consommation en France: *Ch. Gide*. Une lettre de Karl Marx (Remarques critiques sur le programme socialiste). La conciliation et l'arbitrage en Angleterre: *E. Campredon*.

No. 11. November, 1894—

L'Histoire de la Démographie: *E. Levasseur*. Les Cartels (Syndicats industriels) au point de vue de la législation: *Dr. A. Menzel*. Le nouveau régime douanier des Colonies et ses résultats: *A. Girault*. Divisibilité ou indivisibilité des héritages paysans en France: *P. du Maroussem*.

GERMANY—

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Der österreichische Strafgesetzentwurf und die arbeitende Klasse: *Dr. H. Heinemann.* Erweiterung und Reform der deutschen Unfallversicherungsgesetzgebung: *Dr. E. Lange.* Die geplante Agrarreform in Oesterreich: *Dr. M. Hainisch.*

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Die Maximalarbeitstag im Bäcker- und Konditoren-gewerbe: *K. Oldenberg.*

Heft 4. 1894—

Die Reform der Hamburgischen Verwaltung. Betrachtungen über das Wesen der Selbstverwaltung: *E. Münsterberg.* Eisenbahnen, Wasserstrassen und der preussische Staatshaushalt: *G. Cohn.* Die Reform unserer Socialversicherung: *W. Kulemann.* Die wirtschaftliche Krisis des Jahres 1893 in den Vereinigten Staaten von Nordamerika: *E. von Halle.* Die Schweizer Stickerei-industrie und ihre Organisation: *O. Hintze.*

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Die Arbeitsteilung in der Landwirtschaft: *Backhaus.* Die zweite Lesung des Entwurfes eines Bürgerlichen Gesetzbuches für das Deutsche Reich (*continued in next numbers*): *Greiff.* Das Gesetz über die Abzahlungsgeschäfte: *L. Fuld.*

Band viii. Heft 4. 1894—

Vor- und Rückblicke auf Zunftzwang und Gewerbefreiheit: *K. von Rohrscheidt.* Die jugendlichen Berliner unehelicher Herkunft: *H. Neumann.* Reform der deutschen Armen-gesetzgebung: *E. Loening.* Die Ergebnisse deutschen Kriminalstatistik 1882-92 (*continued in the next number*): *G. Lindenberg.*

Band viii. Heft 5. 1894—

Kritische Betrachtungen zur theoretischen Statistik: *L. von Bortkewitsch.* Die deutsche Silberkommission: *W. Lexis.*

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Band vii. Heft 4. 1894—

Zur Biographie des Stifters der Physiokratie, François Quesnay: *Prof. A. Oncken.* Auf dem Wege zur Gewerbefreiheit in Preussen (concluded): *K. von Rohrscheidt.*

AUSTRIA—

Statistische Monatschrift—

August—September, 1894—

Die Hauptergebnisse der österreichischen Berufsstatistik: *Dr. H. Rauchberg.* Die Fischerei an der adriatischen Küste Oesterreich im Jahre 1892-93: *K. Krafft.*

October, 1894—

Die österreichischen Assecuranz-Gesellschaften im Jahre 1892: *R. Krickl.*

ITALY—

Giornale degli Economisti—

October, 1894—

La grande e la piccola industria armentizia nell' appennino marchigiano: *F. Colletti*. La dottrina politico-economica di Fr. Ferrara: *D. Berardi*. Libero scambio, protezione e trasformazione agraria in Sicilia: *Un libero scambista siciliano*.

November, 1894—

La riforma bancaria: *P. des Essars*. Il riordinamento delle Borse di commercio: *G. Valenti*.

December, 1894—

Entrate patrimoniali e demanio: *A. de Viti de Marco*. Una teoria protezionista dei cambi esteri: *A. Zagnoni*. Sei anni di protezionismo in Italia (a proposito del Congresso di Milano): *F. Giretti*.

SWITZERLAND—

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1 *Quartal-Heft*. 1894—

Die Taubstummenanstalten der Schweiz im Jahre 1892: *G. Lambelet*. Geschichte des Armenwesens im Kanton Bern von der Reformation bis auf die neuere Zeit: *K. Geiser*. Über die Ruhegehälter und die Versorgung der Witwen und Waisen der Lehrer in der Schweiz, sowie Materialien und Vorschläge zur Errichtung von Pensionskassen für Lehrer: *Prof. J. H. Graf*.

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Die Erstellung billiger Wohnungen durch die Gemeinde Bern: *A. Lüscher*. Vergleichen der neuesten Volkszählungsergebnisse mit einer Bevölkerungsstatistik von 1795: *C. H. Mann*. Die Entwicklung der Milchwirtschaft mit besonderer Berücksichtigung derjenigen in der Schweiz: *Prof. F. Anderegg*. Quelques renseignements sur la population du canton de Genève depuis la Restauration de la République: *Dr. E. Kuhne*. Die Arbeitslosigkeit in Zürich in den Wintern von 1892-93 und 1893-94 und Versuch einer Arbeitslosen-Statistik: *A. Merk*.

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2^{ème} et dernière Livraison, 1894—

Movimento della popolazione in alcuni Stati d' Europa e d' America. Parte I. Matrimoni e nascite negli anni

INTERNATIONAL—*Contd.**Bulletin de l'Institut International de Statistique. Tome vii.**2^{ème} et dernière Livraison, 1894—Contd.*

1874-92. Appunti statistici sulla emigrazione dall' Europa e sulla immigrazione in America e in Australia. L'imposta progressiva e le riforme tributarie di alcuni Stati europei: *G. R. Salerno*. Dell' ordinamento degli uffici centrali di statistica dell' Impero di Germania e del Regno di Prussia. Essai d' anthropométrie militaire: *Dr. D. Livi*. Confronti internazionali di statistica delle cause di morte. Sulle condizioni demografiche, edilizie ed amministrative di alcune grandi città italiane ed estere. Les impôts et les dettes hypothécaires sur la propriété foncière rustique dans quelques Etats d'Europe.

VII.—*Additions to the Library.*

Additions to the Library during the Quarter ended 15th December, 1894, arranged alphabetically under the following heads:—(a) Foreign Countries; (b) India and Colonial Possessions; (c) United Kingdom and its Divisions; (d) Authors, &c.; (e) Societies, &c. (British); (f) Periodicals, &c. (British).

Donations.	By whom Presented (when not purchased).
(a) Foreign Countries.	
Argentine Republic—	
Annuario del Departamento Nacional de Estadística correspondiente à 1893. La. 8vo.....	The National Statistical Department
Comercio Exterior Argentino. Año 1894. No. 82. Importacion y Exportacion de los primeros semestres de 1893 y 1894. 8vo.....	
Higiene Publica. Anales de. (Current monthly numbers)	
BUENOS AYRES (PROVINCE). Boletin mensual de Estadística. Año iv, Nos. 3 and 5. 8vo. 1894	The Provincial Statistical Bureau
BUENOS AYRES (CITY). Bulletin mensuel de Statistique municipale. (Current numbers)	
CORDOBA. Boletin trimestral de Estadística municipal de la Ciudad. Año i, No. 1. 8vo. 1894	The Statistical Bureau
Instituto Geografico Argentino. Boletin del, Tomo xv, Cuadernos 1—4. Map, 8vo., 1894	The Institute
Austria-Hungary—	
Ackerbau-Ministeriums. Statistisches Jahrbuch des k. k., für 1893. Heft 2. Der Bergwerksbetrieb Österreichs im Jahre 1893. Lief 1. Bergwerks-Production. 8vo.	The Ministry of Agriculture
"Austria." Archiv für Gesetzgebung und Statistik auf den Gebieten der Gewerbe, des Handels und der Schifffahrt. (Current numbers), 8vo. 1894	
Ausweis über die monatl. Durchschnittspreise von Weizen, Korn, Gerste, Hafer, und Mais in Markorten für March—August, 1894. Sheets	The Central Statistical Commission

Donations—Contd.

Donations.	By whom Presented (when not purchased).
(a) Foreign Countries—Contd.	
Austria-Hungary—Contd.	
Consulats-Behörden. Jahresberichte der k. und k. österreichisch-ungarischen. (Current numbers.) 8vo. 1894	The Statistical Department, Ministry of Commerce
Handel. Statistische Übersichten betreffend den auswärtigen, des österreichisch-ungarischen Zollgebiets. (Current monthly numbers)	
Handels. Statistik des auswärtigen, des österreichisch-ungarischen Zollgebiets. Jahre 1892, Band i; und Jahre 1893, Band ii. 2 vols, 8vo. 1894	
Rechtspflege. Ergebnisse des Concursverfahrens, im Jahre 1890. Fol.	
Rechtspflege. Statistische Nachweisungen über das Civilgerichtliche Depositenwesen, die cumulativen Waisencassen, Jahre 1890. Fol.	
Sanitätswesens. Statistik des, für 1891. Fol.	The Central Statistical Commission
Statistische Monatschrift. (Current numbers)	
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(Corrected to 31st December, 1894.)

ROYAL STATISTICAL SOCIETY.

(FOUNDED 1834. INCORPORATED 1887.)

9, ADELPHI TERRACE,
STRAND, W.C., LONDON.

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LONDON:

PRINTED FOR THE SOCIETY,
BY HARRISON AND SONS, 45 AND 46, ST. MARTIN'S LANE,
Printers in Ordinary to Her Majesty.

1895.

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ROYAL STATISTICAL SOCIETY.

No. 9, ADELPHI TERRACE, STRAND, W.C., LONDON.

NOTICES TO FELLOWS.

December, 1894.

THE Council desire to call the attention of the Fellows to the fact that notwithstanding the change in the name of the Society by the addition of the word "Royal," they are still, in using letters after their names, signifying the membership of the Society, only entitled under Rule 6, to use the letters F.S.S.

ANNUAL Subscriptions are due in advance, on the 1st of January in each year. A Form for authorising a Banker or Agent to pay the Subscription Annually will be forwarded by the Assistant Secretary, on application. When convenient, this mode of payment is recommended. Drafts should be made payable to the order of "The Royal Statistical Society," and crossed "*Messrs. Drummond and Co.*"

To be included in the Ballot at any particular Monthly Meeting, the Nomination Papers of Candidates for Fellowship, must be lodged at the Office of the Society, at least six days before the date of such Meeting.

FELLOWS who may desire to receive Special and Separate Notices of each Paper to be read before the Society at the Monthly Meetings, should indicate their wishes to the Assistant Secretary.

THE Monthly Meetings of the Society will, during the Session 1894-95, be held in the afternoon at 4.45 P.M., instead of at 7.45 P.M.

Tea and coffee will be served at 4.30 P.M., instead of after the Meeting.

On such days the Office, Library and Reading Room of the Society (9, Adelphi Terrace) will be closed at 4 P.M.

THE Library and the Reading Room are open daily for the use of Fellows from 10 A.M. to 5 P.M., excepting on Saturdays, when they are closed at 2 P.M. The Society's Rooms are entirely closed during the month of September, but books required by Fellows can be obtained from the Library on application.

FELLOWS borrowing books from the Library are requested to be good enough to return them with as little delay as possible, but without fail at the expiration of a month, and without waiting for them to be recalled. (See p. 71.)

FELLOWS changing their Addresses are requested to notify the same to the Assistant Secretary, so that delay in forwarding communications, or the *Journal*, may be avoided.

BY ORDER OF THE EXECUTIVE COMMITTEE.

CALENDAR FOR THE SESSION 1894-95.

1894	MON.	TUES.	WED.	THURS.	FRI.	SATUR.	SUN.	1895	MON.	TUES.	WED.	THURS.	FRI.	SATUR.	SUN.
NOV.	...	...	...	1	2	3	4	MAY	...	...	1	2	3	4	5
	5	6	7	8	9	10	11		6	7	8	9	10	11	12
	12	13	14	15	16	17	18		13	14	15	16	17	18	19
	19	20	21	22	23	24	25		20	21	22	23	24	25	26
	26	27	28	29	30				27	28	29	30	31		
DEC.	...	...	...	...	...	1	2	JUNE	...	...	...	...	...	1	2
	3	4	5	6	7	8	9		3	4	5	6	7	8	9
	10	11	12	13	14	15	16		10	11	12	13	14	15	16
	17	18	19	20	21	22	23		17	18	19	20	21	22	23
	24	25	26	27	28	29	30		24	25	26	27	28	29	30
	31														
1895								JULY	1	2	3	4	5	6	7
JAN.	...	1	2	3	4	5	6		8	9	10	11	12	13	14
	7	8	9	10	11	12	13		15	16	17	18	19	20	21
	14	15	16	17	18	19	20		22	23	24	25	26	27	28
	21	22	23	24	25	26	27		29	30	31				
	28	29	30	31											
FEB.	...	...	...	...	1	2	3	AUG.	...	...	...	1	2	3	4
	4	5	6	7	8	9	10		5	6	7	8	9	10	11
	11	12	13	14	15	16	17		12	13	14	15	16	17	18
	18	19	20	21	22	23	24		19	20	21	22	23	24	25
	25	26	27	28					26	27	28	29	30	31	
MAR.	...	...	...	...	1	2	3	SEP.	...	...	...	...	...	...	1
	4	5	6	7	8	9	10		2	3	4	5	6	7	8
	11	12	13	14	15	16	17		9	10	11	12	13	14	15
	18	19	20	21	22	23	24		16	17	18	19	20	21	22
	25	26	27	28	29	30	31		23	24	25	26	27	28	29
									30						
APR.	1	2	3	4	5	6	7	OCT.	...	1	2	3	4	5	6
	8	9	10	11	12	13	14		7	8	9	10	11	12	13
	15	16	17	18	19	20	21		14	15	16	17	18	19	20
	22	23	24	25	26	27	28		21	22	23	24	25	26	27
	29	30							28	29	30	31			

The dates of the Monthly Meetings of the Society, at which Papers are read and discussed, are marked in the Calendar above by **Black Figures**.

The Chair will be taken at 4.45 p.m., precisely.

These Meetings are held, by permission of the Committee of Council on Education, in The Lecture Theatre of the Museum of Practical Geology, 28, Jermyn Street, S.W.

THE ANNUAL GENERAL MEETING

WILL BE HELD ON THE 25TH JUNE, 1895, AT 5 P.M.,
AT 9, ADELPHI TERRACE.

ROYAL STATISTICAL SOCIETY.

Programme of the Session 1894-95.

THE

MONTHLY MEETINGS

ARE HELD ON THE

THIRD TUESDAY IN THE MONTHS OF NOVEMBER—JUNE

(EXCEPT APRIL),

In the LECTURE THEATRE of the MUSEUM OF PRACTICAL GEOLOGY,
28, JERMYN STREET, S.W., at 4.45 p.m.

Tuesday, Nov. 20	Tuesday, March 19
„ Dec. 18	„ April 23
„ Jan. 15	„ May 21
„ Feb. 19	„ June 18

The following Papers have been read (Dec., 1894) :—

The President's Inaugural Address on "The Relations between Morals, Economics, and Statistics." By the Right Hon. LORD FARRER. (Delivered 20th November.)

"The Eleventh United States Census." By the Hon. ROBERT P. PORTER (Superintendent of the Census), and Description of the Hollerith Electrical Counting Machine. By Dr. H. HOLLERITH, Washington, D.C., U.S.A. (Read at a Special Meeting the 4th December.)

"Alien Immigration." By GEOFFREY DRAGE, M.A. (Read 18th December.)

The following Papers have been offered; and from these and from others that may yet be offered, a selection will be made by the Council:—

"Changes in Average Wages in Great Britain since 1860." By A. L. BOWLEY, B.A.

"Progress of Friendly Societies and similar Institutions during the Ten Years 1884-94." By E. W. BRABROOK, F.S.A.

"An Inquiry into the Supply of Wheat." By R. F. CRAWFORD.

"Recent Changes in the Distribution of Wealth in England." By BENJAMIN KIDD.

"The Agricultural Depression and the Oxford Colleges." By L. L. PRICE, M.A.

"Municipal Finance, or Local Taxation and Local Expenditure, as illustrated by the case of the City of Birmingham." By E. ORFORD SMITH, Town Clerk of Birmingham.

"Some Illustrations of Friendly Society Finance" By Rev. J. FROME WILKINSON, M.A.

ROYAL STATISTICAL SOCIETY.

AN OUTLINE OF ITS OBJECTS.

THE *Royal Statistical Society* was founded, in pursuance of a recommendation of the British Association for the Advancement of Science, on the 15th of March, 1834; its objects being, the careful collection, arrangement, discussion and publication, of facts bearing on and illustrating the complex relations of modern society in its social, economical, and political aspects,—especially facts which can be stated numerically and arranged in tables;—and also, to form a Statistical Library as rapidly as its funds would permit.

The Society from its inception has steadily progressed. It now possesses a valuable Library of about 30,000 volumes, and a Reading Room. Monthly meetings are held from November to June, which are well attended, and cultivate among its Fellows an active spirit of investigation; the Papers read before the Society are, with an abstract of the discussions thereon, published in its *Journal*, which now consists of fifty-seven annual volumes, and forms of itself a valuable library of reference.

The Society has originated and statistically conducted many special inquiries on subjects of economic or social interest, of which the results have been published in the *Journal*, or issued separately.

To enable the Society to extend its sphere of useful activity, and accomplish in a yet greater degree the various ends indicated, an increase in its numbers and revenue is desirable. With the desired increase in the number of Fellows, the Society will be enabled to publish standard works on Economic Science and Statistics, especially such as are out of print or scarce, and also greatly extend its collection of Foreign works. Such a well-arranged Library for reference, as would result, does not at present exist in England, and is obviously a great *desideratum*.

The Society is cosmopolitan, and consists of Fellows and Honorary Fellows, forming together a body, at the present time, of over *one thousand* Members.

The Annual Subscription to the Society is *Two Guineas*, and at present there is no entrance fee. Fellows may, on joining the Society, or afterwards, compound for all future Annual Subscriptions by a payment of *Twenty Guineas*.

The Fellows of the Society receive gratuitously a copy of each part of the *Journal* as published Quarterly, and have the privilege of purchasing back numbers at a reduced rate. The Library (reference and circulating), and the Reading Room, are open daily, for the convenience of Members.

Nomination Forms and any further information will be furnished, on application to the *Assistant Secretary*, 9, *Adelphi Terrace*, Strand, W C., London.

ROYAL STATISTICAL SOCIETY.

LIST OF THE SOCIETY'S PUBLICATIONS.

Note.—Sets—or Copies of any number—of the *Journal*, or of the other Publications of the Society (if not out of print), can be obtained of the publisher, E. Stanford, 26 and 27, Cockspur Street, Charing Cross, London, S.W., or through any bookseller.

	Price.
Proceedings—	(Out of print)
308 pp. 1 vol. 8vo. 1834-37	
Transactions—	"
Vol. 1, part 1. 148 pp. 4to. 1837	
Journal (published quarterly)—	5s. each part*
Vols. 1—57. 8vo. 1838-94	
General Analytical Index to Vols. 1—50 of the Journal (1838-87). In 4 parts. 8vo.—	3s. 6d. each part
(i) For the First Fifteen Volumes (1838-52)	
(ii) For the Ten Volumes (1853-62)	
(iii) For the Ten Volumes (1863-72)	
(iv) For the Fifteen Volumes (1873-87)	2s. 6d.
First Report of a Committee on Beneficent In- stitutions. I. The Medical Charities of the Metropolis. 68 pp. 8vo. 1857	
Catalogue of the Library—	(Out of print)
iv + 142 pp. 8vo. 1859	
Statistics of the Farm School System of the Continent (reprinted from the <i>Journal</i> , with a Preface and Notes). 63 pp. 8vo. 1878	1s.
Catalogue of the Library (New)—	10s.
iv + 573 pp. Cloth, super royal 8vo. 1884	
Index to the Catalogue of 1884—	10s.
i + 372 pp. Cloth, super royal 8vo. 1886	
Jubilee Volume—	10s. 6d.
xv + 372 pp. Cloth, 8vo. 1885	
List of Fellows, Rules and Bye-Laws, Regu- lations of the Library, and Outline of the Objects of the Society, &c.	Issued gratuitously
Corrected annually to 31st December. 8vo.	

Price of back Numbers of the Journal, &c., to Fellows only.

Fellows only, can obtain sets—or single copies of any number—of the *Journal*, or copies of the other Publications, at the Society's Rooms, 9, Adelphi Terrace, Strand, W.C.

By different resolutions of the Council, the prices charged to Members are as follows:—(a.) back numbers of the *Journal* of the Society, three-fifths of the publishing price; (b.) each part of the General Index to the *Journal*, 2s. 6d.; (c.) the Jubilee Volume, 5s.

NOTE.—One or two numbers of the *Journal* are now out of print.

* Before 1870 the price varied.

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ROYAL STATISTICAL SOCIETY.

Founded 15th March, 1834, Incorporated 31st January, 1887.

LIST OF THE FORMER

Patron and Presidents

OF THE SOCIETY.

Patron.

	Period.
HIS ROYAL HIGHNESS THE PRINCE CONSORT, K.G.....	1840-61

Presidents.

The Most Noble the Marquis of Lansdowne, F.R.S.	1834-36
Sir Charles Lemon, Bart., M.P., LL.D., F.R.S.	1836-38
The Right Hon. the Earl Fitzwilliam, F.R.S.	1838-40
The Right Hon. the Viscount Sandon, M.P.	1840-42
(afterwards Earl of Harrowby.)	
The Most Noble the Marquis of Lansdowne, K.G., F.R.S..	1842-43
The Right Hon. the Viscount Ashley, M.P.	1843-45
(afterwards Earl of Shaftesbury.)	
The Right Hon. the Lord Monteagle	1845-47
The Right Hon. the Earl Fitzwilliam, F.R.S.	1847-49
The Right Hon. the Earl of Harrowby	1849-51
The Right Hon. the Lord Overstone	1851-53
The Right Hon. the Earl Fitzwilliam, K.G., F.R.S.	1853-55
The Right Hon. the Earl of Harrowby, K.G., D.C.L.	1855-57
The Right Hon. the Lord Stanley, M.P.	1857-59
(afterwards Earl of Derby.)	
The Right Hon. the Lord John Russell, M.P., F.R.S.	1859-61
(afterwards Earl Russell.)	
The Right Hon. Sir J. S. Pakington, Bart., M.P., G.C.B. ..	1861-63
(afterwards Lord Hampton.)	
Colonel W. H. Sykes, M.P., F.R.S.	1863-65
The Right Hon. the Lord Houghton, D.C.L., F.R.S.	1865-67
The Right Hon. W. E. Gladstone, M.P., D.C.L.	1867-69
W. Newmarch, F.R.S., Corr. Mem. Inst. of France	1869-71
William Farr, M.D., C.B., D.C.L., F.R.S.	1871-73
William A. Guy, M.B., F.R.S.	1873-75
James Heywood, M.A., F.R.S., F.G.S.	1875-77
The Right Hon. George Shaw Lefevre, M.P.	1877-79
Thomas Brassey, M.P.	1879-80
(now the Right Hon. Lord Brassey, K.C.B.)	
The Right Hon. Sir James Caird, K.C.B., F.R.S.	1880-82
Robert Giffen, C.B., LL.D., F.R.S.	1882-84
Sir Rawson W. Rawson, K.C.M.G., C.B.	1884-86
The Right Hon. George Joachim Goschen, M.P., LL.D., F.R.S.	1886-88
T. Graham Balfour, M.D., F.R.S., F.R.C.P.	1888-90
Frederic J. Mouat, M.D., LL.D., F.R.C.S.	1890-92
Charles Booth.	1892-94

LIST OF FELLOWS.

*Those marked thus * have compounded for their Annual Subscriptions.*

The names of Members of Council are printed in SMALL CAPITALS.

Year of Election.	
1888	Ackland, Thomas G., F.I.A., <i>St. Mildred's House, Poultry, E.C.</i>
1888	Acland, The Right Hon. Arthur Herbert Dyke, M.A., M.P., 28, <i>Cheyne-walk, Chelsea, S.W.</i>
1869	Acland, The Rt. Hon. Sir Thomas Dyke, Bart., F.R.G.S., <i>Killerton, Exeter.</i>
1892	Acworth, William M., M.A., 47, <i>St. George's-square, S.W.</i>
1879	Adam, Robert (<i>City Chamberlain</i>), <i>City Chambers, Edinburgh.</i>
1894	Adams, Charles Edward, B.Sc., A.I.A., <i>Canterbury College, School of Agriculture, Lincoln, N.Z.</i>
1891	Addington, Right Hon. Lord, 24, <i>Princes-gate, S.W.</i>
1890	Adler, Marcus Nathan, M.A., F.I.A., 1, <i>Bartholomew-lane, E.C.</i> , and 22, <i>Craven-hill, W.</i>
1884	Agius, Edward Tancred, 52, <i>Belsize-park-gardens, N.W.</i>
1886	Ailesbury, The Most Hon. The Marquess of, 36, <i>Eaton-place, S.W.</i>
1876	Aitchison, William John, 2, <i>Princes-street, E.C.</i>
1885	Aitken, Thomas, 132, <i>West Regent-street, Glasgow.</i>
1879	Akers-Douglas, The Right Hon. Aretas, M.P., J.P., <i>Chilston Park, Maidstone, Kent.</i>
1876	Aldwinckle, Thomas Williams, 1, <i>Victoria-street, S.W.</i>
1887	Allard, Alphonse, 52, <i>Avenue Louise, Brussels, Belgium.</i>
1889	Allen, Frank, J.P., <i>Guildford-terrace, off Hill-st., Thorndon, Wellington, N.Z.</i>
1876	Allen, John T. R., 41, <i>Norfolk-square, Brighton.</i>

Year of
Election.

- 1877 Allen, Joseph,
18, *Crossley-street, Halifax, Yorkshire.*
- 1893 Anderson, Herbert William,
Halling, Kent.
- 1889 Anderson, John Andrew (Alderman),
Faversham, Kent.
- 1886 Andras, Henry Walsingham, F.I.A.,
25, *Pall Mall, S.W.*
- 1890 *Andrews, Henry,
18, *Essex-street, Strand, W.C.*
- 1871 Angus, R. B.,
Montreal, Canada.
- 1890 Ann, Alfred E., F.R.G.S.,
The Oaks, Snaresbrook, Essex.
- 1884 Anning, Edward James,
78, *Cheapside, E.C.*
- 1872 *Archibald, William Frederick A., M.A.,
4, *Brick-court, Temple, E.C.*
- 1892 Argyle, Jesse,
74, *Lordship-road, Stoke Newington, N.*
- 1888 Asch, William,
4, *Albert Mansions, 118, Victoria-street, S.W.*
- 1883 Aschenheim, Gustav,
27, *Mincing-lane, E.C.*
- 1891 Ashman, Rev. Joseph Williams, M.A., M.D.,
National Club, 1, Whitehall-gardens, S.W.
- 1888 Atkinson, Charles,
Benhilton, St. Saviour's-road, Croydon.
- 1893 Atkinson, Frederick J.
11, *Muir-road, Allahabad, India.*
- 1871 Atkinson, George W.,
1, *Regent-street, Barnsley.*
- 1892 Atkinson, Robert Hope,
Equitable Life Ass. Soc. of United States, Sydney, N.S.W.
- 1893 Aves, Ernest, M.A.,
Toynbee Hall, 28, Commercial-street, E.
- 1872 *Babbage, Major-General Henry Prevost,
Mayfield, Lansdown-place, Cheltenham.
- 1890 Back, Frederick,
Hobart, Tasmania.
- 1872 *Backhouse, Edmund,
Bank, Darlington.

Year of Election.	
1892	Bacon, George Washington, F.R.G.S., 127, <i>Strand, W.C.</i>
1879	Baden-Powell, Sir George, K.C.M.G., M.P., 114, <i>Eaton-square, S.W.</i>
1855	BAILEY, ARTHUR HUTCHESON, F.I.A., 7, <i>Royal Exchange, E.C.</i>
1890	Bain, William Whyte, 23, <i>Castlereagh-street, Sydney, New South Wales.</i>
1881	Baines, Jervoise Athelstane, C.S.I., I.C.S., <i>India Office, S.W.</i>
1887	Baldwin, Alfred, M.P., J.P., <i>Wilden House, near Stourport.</i>
1878	Balfour, The Right Hon. Arthur J., P.C., M.P., LL.D., F.R.S., 4, <i>Carlton-gardens, S.W.</i>
1886	Balfour, Gerald William, M.P., 67, <i>Addison-road, Kensington, W.</i>
1884	Barlow, William Henry, F.R.S., C.E., 2, <i>Old Palace-yard, S.W.</i>
1887	Barnes, Joseph Howard, F.I.A., 70, <i>Lombard-street, E.C.</i>
1889	Barr, Andrew Wallace, 30, <i>Moorgate-street, E.C.</i>
1885	Barratt, Thomas J., 75, <i>New Oxford-street, W.</i>
1887	*Barrett, Thomas Squire, F.Z.S., M.A.I., F.R. Hist. Soc., <i>High-street, Berkhamstead.</i>
1883	Barron, Thomas Walter, M.A., M.B., M.R.C.S., &c., 10, <i>Old Elvet, Durham.</i>
1878	Barry, Francis Tress, M.P., <i>St. Leonard's-hill, Windsor.</i>
1888	*Bartlett, Frederick W., 82, <i>Camberwell Grove, S.E.</i>
1889	Bastable, Professor C. F., M.A., LL.D., 6, <i>Trevelyan-terrace, Brighton-road, Rathgar, Co. Dublin</i>
1873	Bate, George, 258, <i>Waterloo-road, Burslem, Staffs.</i>
1877	BATEMAN, ALFRED EDMUND, C.M.G. (<i>Hon. Secretary</i>), <i>Board of Trade, Whitehall-gardens, S.W.</i>
1888	Batten, John W., 3, <i>Harcourt Buildings, Temple, E.C.</i>
1877	Bayfield, Arthur, 95, <i>Colmore-row, Birmingham.</i>
1873	*Baynes, Alfred Henry, F.R.G.S., 19, <i>Furnival-street, Holborn, E.C.</i>
1871	*Baynes, Wilham Wilberforce, F.I.A., <i>Pickhurst Wood, Bromley, Kent.</i>
1875	*Beardsall, Francis E. M., 63, <i>Brown-street, Manchester.</i>
1875	*Beaufort, William Morris, F.R.A.S., F.R.G.S., 18, <i>Piccadilly, W.</i>

Year of Election.	
1882	*Beazeley, Michael Wornum, M.A., 194, <i>Clapham-road, S.W.</i>
1884	Bedford, James, <i>Woodhouse Cliff, Leeds.</i>
1889	Beecroft, William Henry, <i>Guildhall, Westminster, S.W.</i>
1882	*BEETON, HENRY RAMIE (6a, <i>Austin Friars, E.C.</i>), 9, <i>Maresfield-gardens, Hampstead, N.W.</i>
1886	Begg, Ferdinand Faithfull, <i>Bartholomew House, E.C.</i>
1890	Bell, Frederick, F.I.A., 9, <i>King-street, Cheapside, E.C.</i>
1892	Bell, Frederick William, <i>P.O. Box 916, Johannesburg, S. Africa.</i>
1884	Bell, James T., <i>Northcote, Dowanhill, viâ Glasgow.</i>
1888	Bellew, Thomas Acheson, 65, <i>Tower Buildings, Liverpool.</i>
1888	*Benson, Godfrey R., M.P., <i>Norfolk House, Victoria Embankment, W.C.</i>
1884	*Bentley, Richard, F.R.G.S., <i>Upton, Slough, Bucks.</i>
1884	Berg, Wilhelm, 37, <i>Mincing-lane, E.C.</i>
1890	Berry, Arthur, M.A., <i>King's College, Cambridge.</i>
1891	Berry, Oscar, F.C.A., <i>Monument-yard, E.C.</i>
1875	Bevan, Thomas, <i>Stone Park, near Dartford, Kent.</i>
1869	*Beverley, The Hon. Mr. Justice Henry, 42, <i>Chowringhee, Calcutta.</i>
1879	*Bickford-Smith, William, J.P., D.L., <i>Trevarno, Helston, Cornwall.</i>
1891	Biddle, Daniel, M.R.C.S., L.S.A., <i>Charlton Lodge, Kingston-on-Thames.</i>
1886	Biggs, Thomas Hesketh, (Comptroller), <i>Rangoon, Burma.</i>
1888	Billinghurst, Henry F., 41, <i>Lothbury, E.C.</i>
1883	Binney, William, 34, <i>Great St. Helens, E.C.; Hillfield, Hampstead, N.W.</i>
1884	Birch, Robert W. Peregrine, M. Inst. C.E., 5, <i>Queen Anne's-gate, Westminster, S.W.</i>
1892	*Birkmyre, William, M.P., <i>Reform Club Chambers, Pall Mall, S.W.</i>
1890	Bishop, Frederic Sillery, M.A., J.P., <i>Glanrafon, Sketty, Swansea.</i>
1881	Bishop, George, 113, <i>Powis-street, Woolwich.</i>

Year of Election	
1883	Blades, R. H., 23, <i>Abchurch-lane, E.C.</i>
1884	Boileau, John Peter H., M.D., &c. (<i>Brigade-Surgeon Lieut.-Col.</i>) <i>Medical Staff, Meerut, Bengal.</i>
1881	Bolitho, Thomas Robins, <i>Penalverne, Penzance.</i>
1887	Bolling, Francis, 2, <i>Laurence Pountney-hill, E.C.</i>
1890	Bolton, Edward, <i>Clifton House, Beverley-road, Hull.</i>
1880	Bolton, Joseph Cheney, <i>Carbrook, Larbert, Stirlingshire.</i>
1885	*BONAR, JAMES, M.A., LL.D., <i>Civil Service Commission, Westminster, S.W.</i>
1887	Bond, Edward, <i>Elm Bank, Hampstead, N.W.</i>
1894	Bonnett, Alfred, 31, <i>Clifton-road, Peckham, S.E., and 10, City-road, E.C.</i>
1885	BOOTH, CHARLES (<i>Honorary Vice-President</i>), 2, <i>Talbot-court, Gracechurch-street, E.C.</i>
1885	Bordman, Emanuel Linden, <i>Victoria House, Trinity-street, Southwark, S.E.</i>
1879	Bordman, Thomas Joseph Clarence Linden, LL.D., <i>Victoria House, Trinity-street, Southwark, S.E.</i>
1888	Bottomley, George, <i>Arbourfield House, Derby.</i>
1871	BOURNE, STEPHEN, 5, <i>Lansdowne-road, Lee, S.E.</i>
1885	Bovell, The Hon. Henry Alleyne, LL.B., <i>Chelston, Barbados, West Indies.</i>
1876	Bowen, Horace George, <i>Bank of England, E.C.</i>
1894	Bowley, Arthur Lyon, B.A., <i>St. John's School, Leatherhead.</i>
1879	Bowley, Edwin, F.I.A., 78, <i>South Hill Park, Hampstead.</i>
1886	BOYLE, SIR COURTENAY, K.C.B., <i>Board of Trade, Whitehall-gardens, S.W.</i>
1894	Brabrook, Edward William, F.S.A., 28, <i>Abingdon-street, S.W.</i>
1883	Braby, Frederick, F.C.S., F.G.S., <i>Bushey Lodge, Teddington.</i>
1875	Braby, James, J.P., <i>Maybanks, Rudgwick, Sussex.</i>
1888	Bramwell, Sir Frederick J., Bart., D.C.L., F.R.S., 5, <i>Great George-street, Westminster, S.W.</i>
1873	BRASSEY, THE RIGHT HON. LORD, K.C.B. (<i>Honorary Vice-President</i>), 4, <i>Great George-street, S.W. ; and 24, Park-lane, W.</i>

Year of
Election.

- 1864 *Braye, The Right Hon. Lord,
Stanford Hall, Rugby.
- 1884 Breckon, John Robert,
53, John-street, Sunderland.
- 1883 Broad, Harrington Evans, M.P.,
1, Walbrook, E.C.
- 1883 Brooke, C. B.,
16, Leadenhall-street, E.C.
- 1874 Broom, Andrew, A.C.A.,
2, De Crespigny-terrace, Denmark-hill, S.E.
- 1878 Brown, Alexander Hargreaves, M.P.,
12, Grosvenor-gardens, S.W.
- 1893 Brown, James William Bray, F.S.A.A.,
Corporation-st., Birmingham, & Moseley, Worcestershire.
- 1890 Browne, Edward William,
33, Poultry, E.C.
- 1875 Browne, Thomas Gillespie C., F.I.A.,
6, Princes-street, Bank, E.C.
- 1886 *Brunner, John Tomlinson, M.P.,
Druid's Cross, Wavertree, Liverpool.
- 1865 Bunce, John Thackray,
Longworth, Priory-road, Edgbaston, Birmingham.
- 1880 *Burdett, Henry Charles,
The Lodge, Porchester-square, W.
- 1873 *Burdett-Coutts, The Right Hon. the Baroness,
1, Stratton-street, W.; and Holly Lodge, Highgate, N.
- 1884 Burdett-Coutts, William, M.P.,
1, Stratton-street, Piccadilly, W.
- 1885 BurrIDGE, Arthur Francis, F.I.A.,
18, Lincoln's Inn Fields, W.C.
- 1880 Burt, Frederick, F.R.G.S.,
Uplands, Stoke Poges, near Slough, Bucks.
- 1872 *Burton, The Right Hon. Lord, (*Chesterfield House, Mayfair, W.*); *Rangemore, Burton-on-Trent.*
- 1886 Bush, Baron William de, F.C.S.,
3, Palace-gate, W.
- 1893 *Bushill, Thomas William,
Brantwood, Coventry.
- 1891 Butler, Arthur J.,
Dale Close, Mansfield, Notts.
- 1892 Byworth, Charles Joseph,
Town Clerk, Cape Town, South Africa.

Year of Election.	
1877	Campbell, George Lamb, <i>Market-street, Wigan.</i>
1879	Campbell-Colquhoun, Rev. John Erskine, <i>Chartwell, Westerham, Kent.</i>
1889	Cannan, Edwin, M.A., 24, <i>St. Giles', Oxford.</i>
1891	Cannon, Henry W. (<i>Chase National Bank</i>), 15, <i>Nassau-street, New York, U.S.A.</i>
1888	Carbutt, Sir Edward H., Bart., M. Inst. M.E., M. Inst. C.E., 19, <i>Hyde Park-gardens, W.</i>
1881	Carden, Lionel Edward Gresley, <i>H.M. Consul, Mexico.</i>
1872	*Carillon, J. Wilson, F.S.A., F.R.G.S., <i>The Chimes, Richmond, Surrey.</i>
1887	*Carmichael, Charles H. E., M.A., F.I. Inst., <i>Earlsmuir House, Mirabel-road, Fulham, S.W.</i>
1885	Carmichael, Sir Thomas D. Gibson, Bart., <i>Castlecraig, Dolphinton, N.B.</i>
1893	*Carpenter, Henry Saunders, <i>Beckington House, Weighton-road, Anerley, S.E.</i>
1888	Carr, Ebenezer, 24, <i>Coleman-street, Bank, E.C.</i>
1893	Carr, William Robert Taylor, <i>Monument House, Monument-square, E.C.</i>
1888	Carruthers-Wain, William J., <i>Finsbury Circus Buildings, 18, Eldon-street, E.C.</i>
1890	*Carter, Eric Mackay, A.I.A., F.C.A., 33, <i>Waterloo-street, Birmingham.</i>
1883	*Carter, Joseph Robert, 67, <i>Cromwell-avenue, Highgate, N.</i>
1878	*Casley, Reginald Kennedy, M.D., <i>Ipswich.</i>
1885	Casson, William A., 12, <i>Romola-road, Herne Hill, S.E.</i>
1883	Cater, J. J.,
1881	Causton, Richard Knight, M.P., 12, <i>Devonshire-place, Portland-place, W.</i>
1858	Chadwick, David, <i>The Poplars, Herne Hill, Dulwich, S.E.</i>
1869	CHADWICK, JOHN OLDFIELD, F.R.G.S., 95, <i>Finsbury-pavement, E.C.</i>
1884	*Chailley-Bert, Joseph, 12, <i>Avenue Carnot, Paris.</i>
1888	Challis, William H., <i>Enfield, Middlesex.</i>
1880	*Chamberlain, The Right Honourable Joseph, M.P., F.R.S. 40, <i>Prince's-gardens, S.W.</i>

Year of Election.	
1886	Chamberlain, Richard, 39, <i>Cadogan-square, S.W.</i>
1886	Chapman, Samuel, F.I.Inst., <i>c/o Inter-Oceanic Railway, Mexico City (viâ New York).</i>
1892	*Chatham, James, F.I.A., F.F.A., <i>Inverleith Park House, Edinburgh.</i>
1851	*Cheshire, Edward, 3, <i>Vanbrugh Park, Blackheath, S.E.</i>
1853	Chisholm, David, F.I.A., F.S.A., 9, <i>Rillbank-terrace, Edinburgh.</i>
1886	*Chisholm, George Goudie, M.A., B.Sc., F.R.G.S., 26, <i>Dornton-road, Balham, S.W.</i>
1849	Clark, Gordon Wyatt, 10, <i>James-street, Buckingham-gate, S.W.</i>
1886	Clark, Henry James (<i>Government Statist of Trinidad</i>). <i>Port of Spain, Trinidad.</i>
1888	Clarke, Charles Goddard, <i>Ingleside, Elm Grove, Peckham, S.E.</i>
1871	Clarke, Ebenezer, <i>Grove-road-villas, Walthamstow.</i>
1882	*Clarke, Ernest, M.A., F.L.S., F.S.A., 13c, <i>Hanover-square, W.</i>
1877	*Clarke, Henry, L.R.C.P., <i>H.M. Prison, Wakefield, Yorks.</i>
1890	Clarke, Henry, <i>Cannon Hall, Hampstead, N.W.</i>
1856	*CLARKE, HYDE, 32, <i>St. George's-square, S.W.</i>
1869	Cleghorn, John, 3, <i>Spring-gardens, S.W.</i>
1853	Clirehugh, William Palin, F.I.A., 66, <i>Cornhill, E.C.</i>
1888	Clough, Walter Owen, M.P., 89, <i>Gresham-street, E.C., and The Ridgway, Enfield.</i>
1889	Coate, James, <i>East Villa, Lyme-road, Axminster.</i>
1873	Cockle, Captain George, F.R.G.S., 9, <i>Bolton-gardens, South Kensington, S.W.</i>
1894	Cockram, George Edward, (100, <i>Addison-road, W.</i>) <i>Cowleymoor, Tiverton, Devon.</i>
1884	Cockshott, John James, 24, <i>Queen's-road, Southport.</i>
1887	Cohen, Nathaniel Louis, 31, <i>Throgmorton-street, E.C.</i>
1888	Coleman, Harry, 34, <i>Golden-square, W.</i>
1859	Coles, John, F.I.A., 39, <i>Throgmorton-street, E.C.</i>
1892	*Collet, Miss Clara Elizabeth, M.A., 7, <i>Coleridge-road, Finsbury Park, N.</i>

Year of
Election.

- 1887 Collet, Sir Mark Wilks, Bart.,
2, *Sussex-square, W., and St. Clere, Sevenoaks, Kent.*
- 1882 *Collum, Rev. Hugh Robert, M.R.I.A., F.R.C.I.,
Leigh, near Tunbridge, Kent.
- 1867 Colman, Jeremiah James, M.P.,
Carrow House, Norwich.
- 1878 Colomb, Captain Sir John C. R., K.C.M.G., J.P.,
Droumquinna, Kenmare, Kerry, & 75, Belgrave-rd., S.W.
- 1889 Compton, The Right Hon. Earl, M.P.,
51, Lennox-gardens, S.W.
- 1891 Cooper, Joseph,
60, Park-street, Farnworth, near Bolton.
- 1874 Corbett, John,
20, Hertford-street, Mayfair, W.
- 1883 Corgialegno, M.,
George-yard, Lombard-street, E.C.
- 1873 Cork, Nathaniel, F.R.G.S.,
18, Birchin-lane, E.C.
- 1889 Cornwallis, Fiennes Stanley Wykeham, M.P.,
Linton-park, Maidstone, Kent.
- 1880 Cotterell-Tupp, Alfred,
17, Devonshire-terrace, Hyde Park, W.
- 1862 Courtney, The Right Hon. Leonard Henry, M.A., M.P.,
15, Cheyne Walk, Chelsea, S.W.
- 1882 Cowen, Charles,
Johannesburg, Transvaal, South Africa.
- 1888 Craggs, John George, C.A.,
Stone House, St. John's, S E.
- 1874 CRAIGIE, MAJOR PATRICK GEORGE (*Hon. Secretary*),
6, Lyndhurst-rd., Hampstead, & 4, Whitehall-place, S.W.
- 1870 Craik, George Lillie,
29, Bedford-street, Strand, W.C.
- 1890 Crawford, Richard Frederick,
4, Whitehall-place, S.W.
- 1891 *Crawley, Charles Edward (*Controller General*),
Hyderabad, Deccan, India.
- 1894 Crease, Major-General John Frederick, C.B.,
United Service Club, Pall-mall, S.W.
- 1878 Crewdson, Ernest,
Platt Abbey, Rusholme, Manchester.
- 1892 Cripps, Charles Alfred, Q.C.,
32, Elm Park-gardens, S.W.
- 1886 Crispin, Edward,
Royal Insurance Buildings, Dale-street, Liverpool.
- 1890 Croal, David Octavius,
15, York-buildings, Adelphi, W.C.
- 1875 Cunningham, David, C.E.,
Works' Office, Harbour-chambers, Dundee.
- 1883 Cunningham, Rev. William, M.A., D.D.,
2, St. Paul's-road, Cambridge.

Year of Election.	
1884	Curtis, Charles Edward, 26, <i>Gledstanes-road, W. Kensington, W.</i>
1879	Curtis, Robert Leabon, F.S.I., J.P., 120, <i>London Wall, E.C.</i>
1873	Czarnikow, Cæsar, <i>Effingham-hill, Dorking, Surrey.</i>
1886	Dale, David, <i>West Lodge, Darlington.</i>
1888	Dangerfield, Athelstan, A.C.A., 17, <i>Basinghall-street, E.C.</i>
1880	DANVERS, FREDERICK CHARLES, <i>India Office, Westminster, S.W.</i>
1873	Danvers, Sir Juland, K.C.S.I., 103, <i>Lexham-gardens, Kensington, W.</i>
1892	Dash, William Lawson, J.P., 301, <i>Pitt-street, Sydney, N.S.W.</i>
1890	Davey, Robert Williams, B.A.,
1893	Davidson, Captain J. H. D., 31, <i>Grenfell-street, Adelaide, S. Australia.</i>
1869	Davies, James Mair, 166, <i>St. Vincent-street, Glasgow.</i>
1874	Davies, William Henry, 51, <i>Tregunter-road, West Brompton, S.W.</i>
1893	Davis, Harrison, 76, <i>Cheapside, E.C.</i>
1890	Dawson, A. L. Halkett, M.A., F.R.G.S., <i>Molesworth Chambers, Melbourne, Victoria</i>
1888	Dawson, G. J. Crosbie, M. Inst. C.E., F.G.S. <i>North Staffordshire Railway, Stoke-upon-Trent.</i>
1880	Debenham, Frank, 1, <i>Fitzjohn's-avenue, Hampstead, N.W.</i>
1885	De Broë, Emile Conrad De Biehin, <i>c/o Messrs. Williams, Meyers, & Co., Warnford-court, E.C.</i>
1879	*De Ferrieres, The Baron Du Bois, J.P., <i>Bay's-hill House, Cheltenham.</i>
1883	*De Keyser, Sir Polydore (Alderman), <i>Chatham House, Grove-road, Clapham Park, S.W.</i>
1877	Deloitte, William Welch, 4, <i>Lothbury, E.C.</i>
1891	Denne, William, <i>Statistical Department, Custom House, E.C.</i>
1873	Dent, Edward, <i>Fernacres, Fulmer, near Slough, Bucks.</i>

- | Year of Election. | |
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| 1887 | Dent, George Middlewood,
13, <i>Chambres-road, Southport.</i> |
| 1889 | De Rothschild, Leopold, J.P., D.L. (Alderman),
5, <i>Hamilton-place, Piccadilly, W.</i> |
| 1892 | De Smidt, Henry (<i>Permanent Under-Secretary</i>),
<i>Cape Town, Cape Colony.</i> |
| 1877 | Dever, Henry,
4, <i>Lothbury, E.C.</i> |
| 1892 | Dewar, William Nimmo,
163, <i>Queen-street, Melbourne, Victoria.</i> |
| 1889 | De Woolfson, Louis Estevan Green,
<i>St. John's-hill, Shrewsbury.</i> |
| 1877 | De Worms, The Right Hon. Baron Henry, M.P., F.R.A.S.,
<i>Carlton Club, Pall Mall, S.W.</i> |
| 1890 | Dickinson, Willoughby Hyett,
19, <i>Camptden-hill-road, W.</i> |
| 1866 | *Dilke, The Right Hon. Sir C. Wentworth, Bart., M.P., LL.M.,
76, <i>Sloane-street, S.W.</i> |
| 1873 | Dixon, George, M.P.,
<i>The Dales, Edgbaston, Birmingham.</i> |
| 1889 | Double, Alfred,
25, <i>Jewin-crescent, Cripplegate, E.C.</i> |
| 1889 | Doubleday, William Bennett,
123, <i>Tulse-hill, S.W.</i> |
| 1889 | Douglas, J.,
<i>E.I. Railway House, Dalhousie Square, Calcutta.</i> |
| 1875 | Doxsey, Rev. Isaac,
186, <i>The Grove, Camberwell, S.E.</i> |
| 1878 | Doyle, Patrick, C. E., F.G.S., M.R.A.S.,
<i>Calcutta.</i> |
| 1894 | Drage, Geoffrey, M.A.,
<i>Hatfield, Herts.</i> |
| 1894 | Drake, Francis C., B.A.,
<i>Financial Department, India Office, S.W.</i> |
| 1894 | Drew, William Francis, F.R.Hist.S.,
<i>Weybridge Heath, Surrey.</i> |
| 1890 | Drummond, Charles James,
21, <i>Dalmore-road, West Dulwich, S.E.</i> |
| 1875 | Dun, John,
<i>Parr's and Alliance Bank, Bartholomew-lane, E.C.</i> |
| 1886 | Dundonald, The Right Hon. the Earl of,
34, <i>Portman-square W.</i> |
| 1878 | *Dunraven, The Right Hon. The Earl of, K.P.,
<i>Kenry House, Putney Vale, S.W.</i> |
| 1885 | Dyer, William John,
17, <i>Montpelier-row, Blackheath, S.E.</i> |

Year of
Election.

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| 1888 | Earnshaw, Jacob,
36, <i>South King-street, Manchester.</i> |
| 1887 | Ebbsmith, Joseph,
86, <i>St. James's-street, S.W.</i> |
| 1888 | Eckersley, J. C., M.A., F.R.G.S.,
<i>Ashfield, Wigan.</i> |
| 1883 | Edgeworth, Professor Francis Ysidro, M.A., D.C.L.,
5, <i>Mount Vernon, Hampstead, and All Soul's, Oxford.</i> |
| 1869 | Edmonds, William,
<i>Annesley House, Southsea.</i> |
| 1880 | Egerton of Tatton, The Right Honourable Lord,
7, <i>St. James's-square, S.W.</i> |
| 1885 | Elliot, William Henry,
122, <i>Mansion House-chambers, Queen Victoria-street, E.C.</i> |
| 1885 | Elliott, Thomas Henry,
<i>Board of Agriculture, 4, Whitehall Place, S.W.</i> |
| 1885 | Elliott, William,
22, <i>St. George's-street, Cape Town.</i> |
| 1877 | Emmott, W. T.,
<i>New Bridge-street, Manchester.</i> |
| 1889 | Erhardt, William,
7, <i>Bury-street, Bloomsbury, W.C.</i> |
| 1882 | Essex, Benjamin Smily,
17, <i>Pall Mall East, S.W.</i> |
| 1879 | Evans, Henry Jones, J.P.,
<i>Greenhill, Whitchurch, Cardiff.</i> |
| | |
| 1892 | Faber, Harald,
<i>Fiona, Lennard-road, Penge, S.E.</i> |
| 1875 | Faraday, Frederick J.,
17, <i>Brazennose-street, Manchester.</i> |
| 1888 | Farlow, A. R. King,
4, <i>King-street, Cheapside, E.C.</i> |
| 1889 | Farnworth, Edward James,
20, <i>Cannon-street, Preston.</i> |
| 1891 | Farquharson, J. C.,
<i>Buenos Ayres and Rosario Railway, 248, Avenida de Mayo, Buenos Ayres.</i> |

Year of Election.	
1878	Farren George, J.P., M.Inst.C.E., <i>Carnarvon.</i>
1878	FARREL, THE RIGHT HON. LORD (<i>President</i>), <i>Abinger Hall, Dorking.</i>
1890	Faulks, Joseph Ernest, B.A., F.I.A., 187, <i>Fleet-street, E.C.</i>
1893	*Fawcett, Mrs. Millicent Garrett, 2, <i>Gower-street, W.C.</i>
1882	Fell, Arthur, M.A., 46, <i>Queen Victoria-street, E.C.</i>
1864	Fellows, Frank Perks, 8, <i>The Green, Hampstead, N.W.</i>
1838	Fellows, James I., <i>Saxon Hall, Palace-court, Kensington Gardens, W.</i>
1894	Fellows, Rowland Hill, 38, <i>Wroxham Mansions, Hampstead, N.W.</i>
1893	Fenwick, John Fenwick, <i>Spencer House, Wimbledon Common.</i>
1894	Field, John William (<i>Gas Light and Coke Company</i>), <i>Horseferry-road, Westminster, S.W.</i>
1860	Finlaison, Alexander John, C.B., F.I.A., 19, <i>Old Jewry, E.C.</i>
1889	*Finlay, Major Alexander, <i>The Manor House, Little Brickhill, Bletchley, Bucks.</i>
1884	*Finnemore, Robert Isaac, J.P., F.R.G.S., <i>Pietermaritzburg, Natal, South Africa.</i>
1892	Fisher, George, J.P., M.H.R. (<i>Chevalier of the Order of Crown of Italy</i>), <i>Hill-street, Wellington, N.Z.</i>
1883	Fisher, Walter Newton, F.C.A., 4, <i>Waterloo-street, Birmingham.</i>
1892	Fitzgerald, Lieut.-Colonel R. Purefoy, J.P., <i>North Hall, Basingstoke.</i>
1885	*Fitz-Gerald, Lt.-Col. Wm. G., M.A., F.R. Hist. S., F.R.S. L., <i>Conneragh, Youghal, Ireland.</i>
1893	Flux, Alfred William, M.A., <i>Owen's College, Manchester.</i>
1882	Foley, Patrick James, M.P., <i>Pearl Ins. Co., Adelaide-place, London Bridge, E.C.</i>
1889	Foot, Alfred, <i>Liskeard, 15, Epsom-road, Croydon.</i>
1841	Fortescue, The Right Honourable Earl, <i>Castle Hill, South Molton, Devon.</i>
1893	Fortune, David, 104, <i>Peel-terrace, Garnethill, Glasgow.</i>
1883	Forwood, Sir William B., J.P., <i>Blundell Sands, Liverpool.</i>
1884	Fosbery, William Thomas Exham, <i>The Castle-park, Warwick.</i>
1868	Fowler, William, 43, <i>Grosvenor-square, W.</i>

Year of Election.	
1890	Fox, Charles Allen, M.R.C.S., M.R.A.S., M.S.A., <i>Martock, Somerset.</i>
1893	Fox, Stephen Newcome, <i>12, Cromwell-crescent, South Kensington, S.W.</i>
1878	Foxwell, Professor H. Somerton, M.A., <i>St. John's College, Cambridge.</i>
1894	Francis, Joseph, <i>10, Finsbury-square, E.C.</i>
1887	Frankland, Frederick William, F.I.A. <i>New York Life Office, 346, Broadway, New York.</i>
1893	Franklin, Ernest L., <i>60, Old Broad-street, E.C.</i>
1886	Fream, Professor William, B.Sc., Lond., LL.D., F.L.S., F.G.S., <i>The Vinery, Downton, Salisbury.</i>
1887	Freeman, Thomas, F.G.S., <i>35, Whitehall-park, N.</i>
1890	Freestone, John, <i>West Bridgford, Nottingham.</i>
1886	Fuller, George Pargiter, M.P., <i>Neston-park, Corsham, Wilts.</i>
1878	Fuller, William Palmer, <i>Portland House, Basinghall-street, E.C.</i>
1893	Gadsden, Arthur Horace,
1879	Gairdner, Charles, <i>Broom, Newton Mearns, Renfrewshire.</i>
1852	Galsworthy, Sir Edwin Henry, J.P., <i>26, Sussex-place, Regent's-park, N.W.</i>
1873	*Galton, Capt. Sir Douglas, K.C.B., D.C.L., LL.D., F.R.S., <i>12, Chester-street, Grosvenor-place, S.W.</i>
1860	Galton, Francis, F.R.S., F.R.G.S., <i>42, Rutland-gate, S.W.</i>
1887	Garcke, Emile, <i>21, Priory-road, Bedford-park, Chiswick.</i>
1889	Garland, Nicholas Surrey, <i>Finance Department, Ottawa, Canada</i>
1881	GARNETT, FREDERICK BROOKSBANK, C.B., <i>4, Argyll-road, Kensington, W.</i>
1879	*Gassiot, John Peter, J.P., <i>The Culvers, Carshalton, Surrey,</i>
1883	Gates, Jacob S., <i>99, Cannon Street, E.C.</i>

Year of Election	
1880	*Gates, John Benjamin, A.C.A., 47, <i>Warwick-street, Regent-street, W.</i>
1881	*Gatty, William Henry, <i>Market Harborough, Leicestershire.</i>
1885	Gibb, George S., <i>North-Eastern Railway Company, York.</i>
1871	Gibbs, George Sleight, 45, <i>Northgate, Darlington.</i>
1889	Gibson, George Rutledge, 55, <i>Broadway, New York City, U.S.A.</i>
1867	*GIFFEN, ROBERT, C.B., LL.D., F.R.S. (<i>Hon. Vice-President</i>), 44, <i>Pembroke-road, Kensington, W.</i>
1877	Gilbert, William H. Sainsbury, 62, <i>Old Broad-street, E.C.</i>
1878	*Glanville, Silvanus Goring, 39, <i>Vicar's-hill, Lewisham, S.E.</i>
1860	GLOVER, JOHN, J.P., 88, <i>Bishopsgate-street Within, E.C.</i>
1888	Goad, Charles E., M. Am. Soc. C.E., M. Can. Soc. C.E., 53, <i>New Broad-street, E.C., and Montreal, Canada.</i>
1884	*Gonner, Professor Edward C.K., M.A., <i>University College, Liverpool.</i>
1886	Goodrich, Harry St. Aubyn, 5, <i>Herbert-crescent, Hans-place, S.W.</i>
1885	Goodsall, David Henry, F.R.C.S., 17, <i>Devonshire-place, W.</i>
1892	Goodwin, Alfred, M.A., 2, <i>Charles-road, St. Leonards, Sussex.</i>
1868	GOSCHEN, THE RIGHT HON. GEORGE JOACHIM, M.P., (<i>Honorary Vice-President</i>), 69, <i>Portland-place, W., and Seacox-heath, Hawkhurst.</i>
1855	*Gosset, John Jackson, <i>Thames Ditton, Surrey.</i>
1885	Goulding, William Purdham, F.S.I., 41, <i>Moorgate-street, E.C.; and 18, Mercers-road, N.</i>
1887	Gover, Frederic Field, <i>Casino House, Herne Hill, S.E.</i>
1887	Graves, The Rev. Michael, B.A., <i>Sir W. Borlase's School, Great Marlow.</i>
1888	Green, Joseph Shaw, 18, <i>King Street, Warrington.</i>
1887	Gribble, George J., <i>Henlam Grange, Biggleswade.</i>
1883	Griffin, Josiah, <i>Vanbrugh Park, Blackheath, S.E.</i>
1868	Griffith, Edward Clifton, <i>Reliance Office, 71, King William-street, E.C.</i>
1889	Grigsby, William Ebenezer, M.A., LL.D.,

Year of Election.	
1883	Grimshaw, Thomas Wrigley, M.D., M.A., (Registrar-General of Ireland), <i>Priorsland, Carrickmines, Co. Dublin.</i>
1886	GRIMSTON, VISCOUNT (Vice-President), <i>Cell Barnes, St. Albans.</i>
1889	Grosvenor, George, <i>Holywell, Streatham-common, S. W.</i>
1888	Grosvenor, The Hon. Norman de l'Aigle, <i>30, Upper Grosvenor-st., W.; Moor-park, Rickmansworth.</i>
1878	Guthrie, Charles, F.C.A., <i>London Chartered Bank of Australia, Melbourne, Victoria.</i>
1885	Guthrie, Edwin, <i>Victoria Park, Manchester.</i>
1887	Guyot, Yves (Député), <i>95, Rue de Seine, Paris.</i>
1880	*Gwynne, James Eglinton A., J.P., F.S.A., <i>97, Harley-st., W.; Folkington Manor, Polegate, Sussex.</i>
1887	Gwyther, John Howard, <i>34, Belsize-park-gardens, N. W.</i>
1884	Haas, Hendrik Christiaan,
1892	Hadfield, Robert A. <i>Fairfield, Sheffield.</i>
1873	*Haggard, Frederick T., <i>1, Broadwater Down, Tunbridge Wells.</i>
1887	Haldeman, Donald Carmichael, <i>Claremont, Gypsy Hill, S.E.</i>
1883	Hall, Sir John, K.C.M.G., <i>Hororata, Canterbury, New Zealand.</i>
1890	Hall, Joseph Castle, <i>2, Basinghall-street, E.C.</i>
1878	Hallett, Thomas George Palmer, M.A., <i>Claverton Lodge, Bath.</i>
1887	Hamilton, Sir Edward W., K.C.B., <i>The Treasury, Whitehall, S.W.</i>
1873	HAMILTON, THE RIGHT HON. LORD GEORGE FRANCIS, M.P., <i>17, Montagu-street, Portman-square, W.</i>
1883	Hamilton, James Thomas, <i>23, High-street, Southampton.</i>
1894	Hamilton, Sir Robert George Crookshank, K.C.B., <i>Custom House, E.C.</i>

Year of Election	
1879	HAMILTON, ROWLAND, <i>Oriental Club, Hanover-square, W.</i>
1884	*Hammersley, Hugh Greenwood, 14, <i>Chester-square, S.W.</i>
1885	*Hancock, Charles, M.A., 2 <i>Oloisters, Temple, E.C.</i> ; and <i>Reform Club, S.W.</i>
1875	Hankey, Ernest Alers, 91, <i>St. Ermin's Mansions, Victoria-street, S.W.</i>
1876	Hansard, Luke, 68, <i>Lombard-street, E.C.</i>
1871	*Harcourt, Right Hon. Sir William Vernon, Q.C., M.P., F.R.S., <i>Reform Club, S.W.</i>
1886	*Hardcastle, Basil William, <i>Beechenden, Hampstead, N.W.</i>
1886	Hardcastle, E. J., <i>Oriental Club, Hanover-square, W.</i>
1883	Harding, G. P., <i>La Chaumière, Trouville S./M. France.</i>
1884	Hardy, George Francis, F.I.A., 12, <i>Waterloo-place, S.W.</i>
1883	Hardy, William Henry, F.C.A., 5, <i>Great Winchester-street, E.C.</i>
1893	Harrap, Thomas, 143, <i>Stamford-street, Ashton-under-Lyne, Lancs.</i>
1891	Harris, Arthur Wellesley, M.R.C.S., L.S.A., D.P.H., <i>High-street, Southampton.</i>
1868	Harris, David, <i>Caroline Park, Granton, Edinburgh.</i>
1887	Harris, William A., F.I. Inst., F.R.S.S.A., <i>Phoenix Chambers, Exchange, Liverpool.</i>
1882	Harris, William James, <i>Halwill Manor, Beaworthy, N. Devon.</i>
1889	Harrold, Major Arthur Lucas, <i>Adelaide, South Australia.</i>
1887	Harrold, Leonard F., F.R.G.S., 29, <i>Great St. Helens, E.C.</i>
1884	Hart, James, 16, <i>Philpot-lane, E.C.</i>
1881	Harvey, Alfred Spalding, B.A., 67, <i>Lombard-street, E.C.</i>
1884	Harvey, Thomas Morgan, <i>Portland House, Basinghall-street, E.C.</i>
1876	Hawkins, Alfred Templeton, F.R.G.S., 30, <i>Budge-row, Cannon-street, E.C.</i>
1880	Hazell, Walter, 15, <i>Russell-square, W.</i>
1887	*Heap, Ralph, jun., 1, <i>Brick-court, Temple, E.C.</i>
1884	Hedley, Robert Wilkin, 31a, <i>Colmore-row, Birmingham.</i>

Year of Election.	
1870	Hefford, George V., <i>Rugby.</i>
1883	Heilgers, Robert Philip, 22, <i>Great St. Helens, E.C.</i>
1889	*Hemming, Arthur George, F.I.A., <i>St. Michael's Cottage, The Common, Weybridge.</i>
1865	Hendriks, Augustus, F.I.A., 7, <i>Cornhill, E.C.</i>
1855	*HENDRIKS, FREDERICK, F.I.A. (<i>Vice-President</i>), 7, <i>Vicarage-gate, W.</i> , and 1, <i>King William-street, E.C.</i>
1888	Heriot, George, 1, <i>Whittington House, Leadenhall-street, E.C.</i>
1881	Hewat, Archibald, F.I.A., F.F.A., 22, <i>George-street, Edinburgh.</i>
1890	Hewins, W. A. S., B.A., 26, <i>Leckford-road, Oxford.</i>
1892	Hey, William Henry, 111, <i>Penton-place, Walworth, S.E.</i>
1834	*HEYWOOD, JAMES, M.A., F.R.S., F.G.S. (<i>Honorary Vice-President and Trustee</i>), 26, <i>Palace-gardens, Kensington, W.</i> ; <i>Athenæum Club, S.W.</i>
1886	Hibbert, H. F., 8, <i>Park-road, Chorley, Lancashire.</i>
1869	Hickson, Sir J., J.P. (<i>General Manager Grand Trunk Ry.</i>), <i>Grand Trunk Railway, Montreal, Canada.</i>
1892	*Higgs, Henry, LL.B., 164, <i>Brixton-hill, S.W.</i>
1878	*Hill, Frederick Morley, 22, <i>Richmond-road, Barnsbury, N.</i>
1878	Hillingdon, The Right Hon. Lord, <i>Camelford House, Park-lane, W.</i>
1890	Hinde, Frederick, <i>Darley Dale, Kent House-road, Beckenham.</i>
1879	Hoare, H. N. Hamilton, 37, <i>Fleet-street, E.C.</i>
1870	*Hoare, Henry, 7, <i>Sussex-gardens, Hyde-park, W.</i>
1889	Hogg, Quintin (Alderman), 5, <i>Cavendish-square, W.</i>
1892	Hole, James, 1, <i>Great College-street, S.W.</i>
1888	Hollams, John, 52, <i>Eaton-square, S.W.</i>
1894	Hollerith, Herman, Ph.D., &c., 1521, <i>31st-street, N.W., Washington, D.C., U.S.A.</i>
1888	Hollington, Alfred J., <i>Aldgate, London, E.</i>
1894	Home, Noel Charles Minchin, LL.B., A.I.A., <i>c/o W. W. Wynne, 14, Argyll-road, Kensington, W.</i>

Year of Election.	
1891	Hooker, Sir Joseph Dalton, K.C.S.I., F.R.S., &c., <i>The Camp, Sunningdale.</i>
1879	Hooper, George Norgate, <i>Elmleigh, Hayne-road, Beckenham, Kent.</i>
1878	Hooper, Wynnard, <i>13, Sumner-place, Onslow-square, S.W.</i>
1887	Hopkins, John, <i>Little Boundes, Southborough, Kent.</i>
1894	Houldsworth, Sir William H., Bart, M.P., <i>35, Grosvenor-place, S.W.</i>
1890	Howarth, William, F.R. Hist. S., <i>10, Clifford's Inn, E.C.</i>
1883	Howell, Francis Buller, <i>2, Middle Temple-lane, E.C.</i>
1883	Howell, George, M.P., <i>Hampden House, Ellingham-road, Shepherd's Bush, W.</i>
1864	Hudson, Thomas, <i>31, Bonham-road, Brixton-hill, S.W.</i>
1894	Hughes, Arthur John, C.I.E., M.I.C.E., <i>Bhagulpur, Bengal, India.</i>
1878	Hughes, John, <i>16, Finsbury-circus, E.C.</i>
1874	HUMPHREYS, NOEL ALGERNON, <i>General Register Office, Somerset House, Strand, W.C.</i>
1893	Humphreys-Owen, Arthur Charles, M.P., <i>Glansevern, Garthmyl, Montgomeryshire.</i>
1883	Hunt, Richard Aldington, A.I.A., <i>Moor-street, Birmingham.</i>
1888	Hunter, George Burton, <i>Wallsend-on-Tyne.</i>
1885	Hunter, William Alfred, LL.D., M.P., <i>2, Brick-court, Temple, E.C.</i>
1890	Huth, Ferdinand M., <i>12, Tokenhouse-yard, E.C.</i>
1888	Hyde, Clarendon G., M.A., B.L., <i>4, Pump-court, Temple, E.C.</i>
1887	Hyde, Henry Barry, <i>5, Eaton-rise, Ealing, W.</i>
1893	Hyde, John, <i>1502, Kenesaw-avenue, N.W., Washington, D.C., U.S.A.</i>

Year of Election.	
1874	*Ingall, William Thomas Fitzherbert Mackenzie, 6, <i>Drapers'-gardens, E.C.</i>
1869	*Inglis, Cornelius, M.D., <i>Athenæum Club, S.W.</i>
1888	*Ionides, Alexander A., 1, <i>Holland Park, W.</i>
1887	Irvine, Somerset William D'Arey, J.P., <i>Equitable Life Office of United States, Brisbane.</i>
1864	*Ivey, George Pearse, 39, <i>Denmark-villas, West Brighton.</i>
1885	Jackson, Henry, 158, <i>The Common, Peckham Rye, S.E.</i>
1880	*Jackson, The Right Hon. William Lawies, M.P., <i>Chapelallerton, Leeds.</i>
1894	Jamieson, George (<i>Assist. Judge, Registrar, and Consul</i>), <i>H.B.M. Consulate, Shanghai, China.</i>
1879	Jamieson, George Auldjo, 37, <i>Drumsheugh-gardens, Edinburgh.</i>
1872	Janson, Frederick Halsey, F.L.S., 41, <i>Finsbury-circus, E.C.</i>
1878	Jeans, J. Stephen, 29, <i>Great George-street, S.W.</i>
1881	*Jersey, The Right Hon. the Earl of, P.C., <i>Osterley-park, Isleworth.</i>
1892	Johnson, Charles Henry, B.A., <i>Kelso House, Hale-end-road, Walthamstow.</i>
1881	Johnson, Edwin Eltham, 110, <i>Cannon-street, E.C.</i>
1891	Johnson, George, 2, <i>The Avenue, Durham.</i>
1888	Johnson, John Grove, 23, <i>Cross-street, Finsbury, E.C.</i>
1880	Johnson, Walter, <i>Rounton Grange, Northallerton.</i>
1883	Johnston, Thomas, <i>Broomsleigh-park, Seal, Sevenoaks.</i>
1878	Johnstone, Edward, <i>Nightingale-lane, Clapham-common, S.W.</i>
1884	*Jones, Edwin, J. P., 141, <i>Cannon-street, E.C.</i>
1878	Jones, Henry R. Bence, B.A., <i>Board of Trade, Whitehall-gardens, S.W.</i>
1874	Jones, Herbert, 15, <i>Montpelier-row, Blackheath, S.E.</i>

Year of Election.	
1894	Jones, Hugh Richard, M.A., M.D., 58a, <i>Grove-street, Liverpool.</i>
1888	Jones, J. Mortimer, 153, <i>Highbury New-park, N.</i>
1887	Jones, John Walter, 58, <i>Cheapside, E.C.</i>
1877	Jones, Theodore Brooke, 70, <i>Gracechurch-street, E.C.</i>
1888	*Jordan, William Leighton, 25, <i>Jermyn-street, S.W.</i>
1858	Jourdan, Francis, 14, <i>Gledhow-gardens, South Kensington, S.W.</i>
1890	Joyner, Robert Batson, <i>Poona, India.</i>
1889	Justican, Edwin, F.I.A., <i>St. Mildred's House, Poultry, E.C.</i>
1873	Kay, Duncan James, <i>Drumpark, Dumfries, N.B.</i>
1885	Keen, William Brock, 3, <i>Church-court, Old Jewry, E.C.</i>
1894	Keene, Captain Christopher Theodore Pacey, 11, <i>Queen's-gate, S.W.</i>
1874	Kelly, Charles, M.D., F.R.C.P., <i>Worthing, Sussex.</i>
1884	Kelly, Edward Festus, 182—184, <i>High Holborn, W.C.</i>
1867	Kelly, Edward Robert, A.M., 182—184, <i>High Holborn, W.C.</i>
1883	Keltie, John Scott, F.R.G.S., <i>Glendevon House, Compayne-gardens, West Hampstead.</i>
1884	Kemp, John, 46, <i>Cannon-street, E.C.</i>
1884	*Kennedy, Sir Charles Malcolm, K.C.M.G., C.B., 4, <i>Louisa-terrace, Exmouth, South Devon.</i>
1886	Kennedy, John Gordon, <i>Foreign Office, S.W.</i>
1878	Kennedy, J. Murray, <i>New University Club, St. James's-street, S.W.</i>
1881	*Kennett-Barrington, Sir V. Hunter, M.A., LL.M. 65, <i>Albert Hall Mansions, S.W.</i>
1883	*Keynes, John Neville, M.A., D.Sc. 6, <i>Harvey-road, Cambridge.</i>
1884	Kimber, Henry, M.P., 79, <i>Lombard-street, E.C.</i>

Year of Election	
1852	Kimberley, The Right Honourable the Earl of, M.A., P.C., 35, <i>Lowndes-square, S.W.</i>
1883	*King, Bolton, B.A., <i>Toynbee Hall, 28, Commercial-street, E.</i>
1884	Kirby, Horace Woodburn, F.C.A., 19, <i>Birchin-lane, E.C.</i>
1894	Kirkcaldy, William Melville, <i>Eglinton, Dunedin, Otago, New Zealand.</i>
1888	*Kitson, Sir James, Bart., M.P., J.P., <i>Gledhow Hall, Leeds.</i>
1889	Kloetgen, W. J. H., 16, <i>Watling-street, E.C.</i>
1889	Klugh, Arthur George, F.S.A.A.,
1878	*Kusaka, Yoshio, <i>First National Bank, Tokio, Japan.</i>
1885	Latham, Baldwin, M. Inst. C.E., <i>Duppas House, Old Town, Croydon.</i>
1892	Latham, Stanley A., A.C.A., 4, <i>Essex-court, Temple, E.C.</i>
1874	Lawes, Sir John Bennett, Bart., LL.D., F.R.S., F.C.S., <i>Rothamsted-park, St. Albans.</i>
1891	Lawrence, James, 8, <i>Tenter-terrace, Morpeth.</i>
1890	Lawson, William Ramage, 57, <i>Fitzjohn's-avenue, Hampstead, N.W.</i>
1883	*Leadam, Isaac Saunders, M.A., 1, <i>The Cloisters, Temple, E.C., and Reform Club, S.W.</i>
1890	Leakey, James, 12, <i>Grove-crescent, Woodford, Essex.</i>
1886	Leathes, Stanley M., <i>Trinity College, Cambridge.</i>
1883	Lee, Henry, <i>Reform Club, S.W.</i>
1886	*Lee, Sir Joseph C., <i>Mosley-street, Manchester.</i>
1879	*Leete, Joseph, 36, <i>St. Mary-at-hill, E.C., & Eversden, S. Norwood-park.</i>
1877	LEFEVRE, THE RIGHT HON. GEORGE SHAW, M.P., M.A., J.P. (<i>Honorary Vice-President</i>), 18, <i>Bryanston-square, W.</i>
1877	*Leggatt, Daniel, LL.D., 5, <i>Raymond-buildings, Gray's-inn, W.C.</i>

Year of Election.	
1880	Leighton, Stanley, M.P., <i>Sweeney Hall, Oswestry, Salop.</i>
1887	Leitch, Alexander, <i>17, King William-street, E.C.</i>
1892	Leon, Herbert Samuel, M.P., <i>Bletchley Park, Bletchley, Bucks.</i>
1888	*Le Poer-Trench, Col. The Hon. W., R.E., J.P., <i>3, Hyde Park-gardens, W.</i>
1887	*Le Roy-Lewis, Herman, B.A. (<i>Trinity College, Cambridge</i>), <i>Westbury House, Petersfield, Hants.</i>
1889	Lescher, Herman, <i>6, Clement's-lane, Lombard-street, E.C.</i>
1862	Lewis, Robert, <i>1, Bartholomew-lane, E.C.</i>
1888	*Liberty, A. Lasenby, <i>The Manor House, The Lee, near Gt. Misseuden, Bucks.</i>
1877	Ligertwood, Thomas, M.D., F.R.C.S., <i>Royal Hospital, Chelsea, S.W.</i>
1884	*Lines, William Edward, <i>c/o R. S. Lines, Noel House, Hertford.</i>
1892	Llewelyn, Sir John T. D., Bart., <i>Penllergare, Swansea.</i>
1878	Lloyd, Thomas, <i>51, Cannon-street, E.C.</i>
1879	Lloyd, Wilson, M.P., F.R.G.S., <i>Myrod House, Wood-green, Wednesbury.</i>
1888	LOCH, CHARLES S., B.A. (<i>Vice-President</i>), <i>Hedge Row Cottage, Queen Anne's-gardens, Bedford-park.</i>
1882	*LONGSTAFF, GEORGE BLUNDELL, M.A., M.D., F.R.C.P. (<i>Vice-President</i>). <i>Highlands, Putney Heath, S.W.</i>
1876	*Lornie, John Guthrie, J.P. (<i>of Birnam and Pilcastle</i>), <i>Rosemount, Kirkcaldy, N.B.</i>
1892	Lough, Thomas, M.P., <i>Bedford Park.</i>
1886	*Low, Malcolm, <i>22, Roland-gardens, S.W.</i>
1889	Lowies, John, <i>Hill-crest, Darenth-road, Stamford-hill, N.</i>
1865	LUBBOCK, THE RIGHT HON. SIR JOHN, BART., M.P., F.R.S. (<i>Trustee</i>), <i>High Elms, Beckenham, Kent.</i>
1878	Lucas, Sir Thomas, Bart., J.P., <i>37, Great George-street, Westminster, S.W.</i>

Year of Election.	
1875	*Mabson, Richard Rous, 51, <i>Cannon-street, E.C.</i>
1873	*Macandrew, William, J.P., <i>Westwood House, near Colchester.</i>
1873	McArthur, Alexander, M.P., 79, <i>Holland-park, W.</i>
1894	Macaulay, Thomas Bassett, <i>Sun Life Insurance Co., Montreal, Canada.</i>
1890	McAuslane, James (<i>Dunster House, Mincing-lane, E.C.</i>), <i>Glenrose, Balham Park-road, S.W.</i>
1891	MacBrayne, John Burns, 17, <i>Royal Exchange-square, Glasgow.</i>
1884	McCabe, William, LL.B., F.I.A., <i>Drawer 2,591, Toronto, Canada.</i>
1888	McCankie, James, 63, <i>George-street, Edinburgh.</i>
1867	M'Clean, Frank, <i>Rusthall House, Tunbridge Wells.</i>
1892	McCleery, James C., 11, <i>Dale-street, Liverpool.</i>
1887	Macdonald, Andrew J.,
1872	Macdonell, John, LL.D., <i>Room 183, The Royal Courts of Justice, Strand, W.C.</i>
1873	*McEwen, Laurence T., <i>c/o. R. A. McLean, 1, Queen Victoria-street, E.C.</i>
1886	*Mackenzie, Colin, F.R.G.S.,
1878	McKewan, William, <i>Elmfield, Bickley, Kent.</i>
1893	Mackinney, Frederick Walker, <i>London County Council, Spring Gardens, S.W.</i>
1876	*McLean, Robert Allan, F.R.G.S., 1, <i>Queen Victoria-street, E.C.</i>
1863	*Maclure, John William, M.P., J.P., D.L., <i>Carlton Club; The Home, Whalley Range, Manchester.</i>
1888	McNiel, Henry, 5, <i>Cross-street, Manchester.</i>
1875	Macpherson, Hugh Martin, F.R.C.S. (<i>Inspector-General</i>), 14, <i>St. James's-square, S.W.</i>
1887	Macpherson, Walter Charles Gordon, <i>Howrah, E.I.R., Bengal, India.</i>
1883	Macqueen, Robert Davidson Barkly, 20, <i>Upper Addison-gardens, Kensington, W.</i>
1882	MacRosty, Alexander, <i>West Bank, Esher.</i>
1889	McVail, John C., M.D., &c., 2, <i>Strathallan-terrace, Dowanhill, Glasgow.</i>
1891	Maidment, Thomas, 1, <i>Gloucester-terrace, Southsea.</i>

Year of Election.	
1887	Makower, Maurice, 11, <i>Randolph-crescent, Maida Vale, W.</i>
1887	Malleson, Frank R., <i>Dixton Manor House, Winchcombe, Cheltenham.</i>
1887	Mann, William Edward, 23, <i>Jewin-street, E.C.</i>
1884	*Manson, Frederick William, <i>Wellfield, Muswell Hill, N.</i>
1888	Manuel, James, <i>c/o The London and Provincial Bank, Cardiff.</i>
1877	*Maple, Sir John Blundell, M.P., 8, <i>Clarence-terrace, Regent's-park, N.W.</i>
1875	Marsh, Alfred, 85, <i>Gracechurch-street, E.C.</i>
1880	*Marshall, Professor Alfred, M.A., <i>Balliol Croft, Madingley-road, Cambridge.</i>
1894	Marshall, David, 350, <i>West-street, Durban, Natal.</i>
1887	Marshall, W. Bayley, M.Inst.C.E., M.Inst.M.E.
1887	Martin, James, 4, <i>King-street, Cheapside, E.C.</i>
1874	*MARTIN, JOHN BIDDULPH, M.A., F.Z.S. (<i>Trustee, Honorary Secretary, and Hon. Foreign Secretary</i>), 17, <i>Hyde-park-gate, S.W.</i>
1872	*MARTIN, RICHARD BIDDULPH, M.A., M.P. (<i>Treasurer</i>), 68, <i>Lombard-street, E.C., and Chislehurst.</i>
1876	*Martin, Thomas Jaques, 84, <i>Collins-street West, Melbourne, Victoria</i>
1884	Mason, William Arthur, 31a, <i>Colmore-row, Birmingham.</i>
1875	*Mathers, John Shackleton, <i>Hanover House, Leeds, Yorkshire.</i>
1883	Mathieson, Frederic Coxhead, <i>Beechworth, Hampstead, N.W.</i>
1891	Maxwell, Robert George, <i>P.O. Box, 299, Cape Town.</i>
1882	Medhurst, John Thomas, <i>Clay-hill, White Hart-lane, Tottenham.</i>
1883	*Medley, George Webb, 21, <i>Park-street, Park-lane, W.</i>
1853	*Meikle, James, F.I.A., 6, <i>St. Andrew's-square, Edinburgh.</i>
1890	Merriman, Hon. John Xavier, <i>Cape Town, Cape of Good Hope.</i>
1884	Merton, Zachary, 18, <i>Chesham-place, S.W.</i>
1873	Millar, William Henry, <i>Cleveland Lodge, New Park-road, Brixton-hill, S.W.</i>

Year of
Election.

- 1890 Miller, Gordon William,
Admiralty, Spring Gardens, S.W.
- 1879 Miller, William,
67, Queen Victoria-street, E.C.
- 1888 Mills, Sir Charles, K.C.M.G., C.B.,
7, Albert Mansions, Victoria-street, S.W.
- 1889 Mills, Major Henry Farnsby,
Junior United Service Club, Charles-street, S.W.
- 1892 MILNER, ALFRED, M.A., C.B.,
Inland Revenue Office, Somerset House, Strand, W.C.
- 1882 Milnes, Alfred, M.A.,
22a, Goldhurst-terrace, S. Hampstead, N.W.
- 1874 *Mocatta, Frederick D., F.R.G.S.,
9, Connaught-place, W.
- 1878 Moffat, Robert J.,
Bank House, Cambridge.
- 1888 *Molloy, William R. J., M.R.I.A. (*National Education Board*),
17, Brookfield-terrace, Donnybrook, Dublin.
- 1887 Moore, Arthur Chisholm,
23, Essex-street, Strand, W.C.
- 1874 Moore, Charles Rendall,
137, Brockley-road, Lewisham-road, S.E.
- 1878 *Moore, John Byers Gunning,
Loymount, Cookstown, Ireland.
- 1893 Morgan, Percy Charlton,
5, Victoria-street, S.W.
- 1874 *Morris, James, M.D., F.R.C.S.,
13, Somers-place, Hyde-park-square, W.
- 1888 Morris, John (*17, Throgmorton-avenue, E.C.*),
34, Hyde-park-square, W.
- 1891 Morrison, Rev. William Douglas,
6, Heathfield-road, Wandsworth-common, S.W.
- 1885 *Mosley, Tonman,
Bangors, Iver, Uxbridge.
- 1847 *MOUAT, FREDERIC JOHN, M.D., F.R.C.S., LL.D. (*Honorary Vice-President*),
12, Durham-villas, Kensington, W.
- 1886 Mowbray, Robert Gray Cornish, M.P.,
10, Little Stanhope-street, S.W.
- 1886 Moxon, Thomas B.,
Manchester and County Bank Limited, Manchester.
- 1889 Muir, Robert, jun.,
Clydesdale Wolseley-road, Crouch-end, N.
- 1883 Muirhead, Henry James,
- 1880 Mulhall, Michael George,
Las Barrancas, Ballybrack, Co. Dublin.
- 1890 Mummy, Bonner Harris, M.D.,
Portsmouth.

Year of
Election.

- 1878 *Mundella, The Right Hon. Anthony John, M.P., F.R.S.,
16, *Elvaston-place, Queen's-gate, S.W.*
- 1891 Murphy, Shirley Foster, M.R.C.S.,
22, *Endsleigh-street, Tavistock-square, W.C.*
- 1878 Murray, Adam,
Hazeldean, Kersal, Manchester.
- 1890 Musgrave, James,
Brookland, Heaton, Bolton.
- 1892 Naoroji, Dadabhai, M.P.,
National Liberal Club, S.W.
- 1888 Narraway, W. F.,
Crooms Hill House, Greenwich, S.E.
- 1889 Nash, William, M.D., M.R.C.S. (*Brigade-Surgeon*),
18, *Victoria-street, S.W.*
- 1878 *Nathan, Henry,
Dashwood House, New Broad-street, E.C.
- 1869 NEISON, FRANCIS GUSTAVUS PAULUS, F.I.A.,
93, *Adelaide-road, South Hampstead.*
- 1877 Nevill, Charles Henry,
11, *Queen Victoria-street, E.C.*
- 1862 Newbatt, Benjamin, F.I.A., F.R.G.S.,
15, *St. James's-square, S.W.*
- 1894 Newey, William Lewis, F.S.A.A.,
39, *Temple-row, Birmingham.*
- 1883 Newmarch, Mrs. Elizabeth,
Mulnath, 5, Harrold-road, Upper Norwood S.E.
- 1889 Newsholme, Arthur, M.D.,
11, *Gloucester-place, Brighton.*
- 1889 Newton, Henry William (Alderman),
2, *Ellison-place, Newcastle-on-Tyne.*
- 1878 Nicholson, Professor J. Shield, M.A., D.Sc.,
University of Edinburgh.
- 1858 Nightingale, Miss Florence,
10, *South-street, Park-lane, W.*
- 1877 Nix, Samuel Dyer, F.C.A.,
3, *King-street, Cheapside, E.C.*
- 1871 *Noble, Benjamin, F.R.A.S.,
North-Eastern Bank, Newcastle-on-Tyne.
- 1877 Norman, H.E. General Sir Henry Wylie, K.C.B., G.C.M.G.
(*Governor of Queensland*), *Brisbane, Queensland.*
- 1878 Northbrook, The Right Hon. the Earl of, G.C.S.I., D.C.L.,
4, *Hamilton-place, Piccadilly, W.*
- 1878 Notthafft, Theodor,
St. Petersburg Int. Commercial Bank, St. Petersburg.

Year of
Election.

- 1888 Oakley, Sir Henry (*General Manager, G.N.R.*),
37, *Chester-terrace, Regent's-park, N.W.*
- 1891 Oates, John, F.S.A.A.,
10, *Saltoun-road, Brixton, S.W.*
- 1893 O'Connor, Vincent C. Scott (*Assistant Comptroller*),
Currency Office, Rangoon, Burma.
- 1884 Odgers, William Blake, M.A., LL.D., Q.C.,
4, *Elm-court, Temple, E.C.*; & *Fitzjohn's-avenue, N.W.*
- 1880 *Oelsner, Isidor,
- 1862 Ogbourne, Charles Henry, A.I.A.
29, *Dalhousie-square, Calcutta.*
- 1885 OGLE, WILLIAM, M.A., M.D., F.R.C.P., &c.,
10, *Gordon-street, Gordon-square, W.*
- 1885 *Oldham, John,
River Plate Telegraph Company, Montevideo.
- 1884 Oldroyd, Mark, M.P.,
Hyrtlands, Dewsbury, Yorkshire.
- 1892 ONSLOW, THE RIGHT HON. THE EARL OF, G.C.M.G.,
7, *Richmond-terrace, S.W.*
- 1878 Oppenheim, Henry,
16, *Bruton-street, Bond-street, W.*
- 1877 Ormond, Richard,
24, *Grainger-street West, Newcastle-on-Tyne.*
- 1889 Oung, Moung Hla (*Assistant Comptroller*),
Rangoon, Burma.
- 1894 Owen, Edgar Theodore,
Office of Government Statist, Melbourne, Victoria.
- 1887 Owen, Evan F., A.I.A.,
Office of Government Statist, Melbourne, Victoria.
- 1887 *Page, Edward D., (*Box 3382*),
c/o Faulkner, Page, & Co., New York City, U.S.A.
- 1886 Pain, James,
St. Mary's-street, Ely.
- 1866 *Palgrave, Robert Harry Inglis, F.R.S.,
Belton, Great Yarmouth, Norfolk.
- 1879 Palmer, George, J.P.,
The Acacias, Reading.

Year of Election.	
1884	Palmer, Joseph Thomas 8, <i>Wine Office-court, Fleet-street, E.C.</i>
1887	Pankhurst, Richard Marsden, LL.D. (5, <i>New-inn-square, W.C.</i>), 10, <i>St. James's-square, Manchester.</i>
1888	Pannell, William Henry, <i>Library-chambers, Basinghall-street, E.C.</i>
1878	Park, David Francis, C.A., F.F.A., A.I.A., 39, <i>Lombard-street, E.C.</i>
1887	Parker, Archibald, <i>Camden-wood, Chislehurst, Kent.</i>
1878	Parry, Thomas, <i>Grafton-place, Ashton-under-Lyne.</i>
1879	Partridge, Henry Francis, LL.D.S., &c., <i>Sussex House, Sussex-place, South Kensington, S.W.</i>
1883	Paterson, John, 1, <i>Walbrook, E.C.</i>
1888	Pattullo, James Durie, 31, <i>St. Swithin's-lane, E.C.</i>
1877	Paul, Henry Moncreiff, 12, <i>Lansdowne-crescent, Notting-hill, W.</i>
1878	Paulin, David, 6, <i>Forres-street, Edinburgh.</i>
1893	Payne, Alexander William, F.C.A., 70, <i>Finsbury-pavement, E.C.</i>
1884	*Peace, Walter, C.M.G., 64, <i>Victoria-street, Westminster, S.W.</i>
1880	*Pease, Sir Joseph Whitwell, Bart., M.P., <i>Hutton Hall, Gisborough, Yorks.</i>
1876	*Peek, Sir Henry William, Bart., <i>Rouston, Lyme Regis, Devon.</i>
1886	Pembroke, The Right Hon. the Earl of, <i>Wilton House, Salisbury.</i>
1880	Pender, Sir John, G.C.M.G., M.P., 18, <i>Arlington-street, S.W.</i> ; 50, <i>Old Broad-street, E.C.</i>
1891	Penn-Lewis, William, 8, <i>Halford-road, Richmond, Surrey.</i>
1888	Perratt, William Henry, A.I.A., 193, <i>The Grove, Hammersmith, W.</i>
1894	Perris, George Herbert, 33, <i>Burnaby-gardens, Chiswick, W.</i>
1890	Peters, John Wyatt, <i>The Gables, Grove-road S., Southsea.</i>
1883	Petheram, Frederick William, F.C.A., 61, <i>Gracechurch-street, E.C.</i>
1886	Peto, Sir Henry, Bart., M.A., <i>Fleet House, Weymouth.</i>
1887	Phelps, Major-General Arthur, 23, <i>Augustus-road, Edgbaston, Birmingham.</i>
1886	*Phelps, The Rev. Lancelot Ridley, M.A., <i>Oriel College, Oxford.</i>

Year of Election.	
1877	Phillipps, Henry Matthews,
1871	*Pickering, John, F.R.G.S., F.S.A., 86, <i>Thicket-road, Anerley, S.E.</i>
1885	Pierrard, Paul, 9, <i>Rue Lés Delibes, Paris.</i>
1878	*Pim, Joseph Todhunter, <i>Rinnamara, Monkstown, County Dublin.</i>
1886	Pink, J. Francis, 62, <i>Chandos-street, Strand, W.C.</i>
1890	PITTAR, THOMAS J., <i>H.M. Custom House, E.C.</i>
1879	Pixley, Francis William, 23, <i>Linden-gardens, W.</i>
1881	Planck, Charles, M.R.C.S. (<i>Deputy Surgeon-General</i>), <i>Allahabad, India.</i>
1883	Platt, James, <i>Rookwood, Hampstead, N.W.</i>
1861	Plowden, Sir Wm. Chicele, K.C.S.I. (5, <i>Park-cres., Port-</i> <i>land-place, W.</i>); <i>Aston Rowant House, Tetsworth, Oxon.</i>
1869	Pochin, Henry Davis, J.P., <i>Bodnant Hall, Eglwysbach, R.S.O., Denbighshire.</i>
1888	Pollard, James, J.P. <i>Chamber of Commerce, Edinburgh.</i>
1884	Polson, John, <i>West Mount, Paisley, N.B.</i>
1891	Pope, Henry Richard, 11, <i>Templeton-place, Earl's-court, S.W.</i>
1891	Potter, Henry, <i>Folkestone Villa, Elm-grove, Peckham, S.E.</i>
1879	*Powell, Sir Francis Sharp, Bart., M.P. (<i>Horton Old Hall</i> <i>Bradford</i>), 1, <i>Cambridge-square, Hyde-park, W.</i>
1888	Powell, James Heslop, 17, <i>Gracechurch-street, E.C.</i>
1871	Power, Edward, 16, <i>Southwell-gardens, South Kensington, S.W.</i>
1877	*Prance, Reginald Heber, <i>Frognal, Hampstead, N.W.</i>
1877	Praschkauer, Maximilian, 109, <i>Fenchurch-street, E.C.</i>
1867	*Pratt, Robert Lindsay, 80, <i>Bondgate, Darlington.</i>
1894	Price, James, 23, <i>The Avenue, Eastbourne.</i>
1887	*Price, L. L., M.A., <i>Oriel College, Oxford.</i>
1877	PRICE-WILLIAMS, RICHARD, M.INST.C.E., 32, <i>Victoria-street, S.W.</i>
1887	Probyn, Leslie Charles, 79, <i>Onslow-square, S.W.</i>

Year of
Election.

- 1889 Probyn, Major Clifford,
55, *Grosvenor-street, Grosvenor-square, W.*
- 1884 *Proctor, William,
89, *Corporation-street, Manchester.*
- 1886 Provand, Andrew Dryburgh, M.P.,
2, *Whitehall-court, Westminster, S.W.*
- 1871 Puleston, Sir John Henry,
2, *Bank-buildings, Princes-street, E.C.*
- 1886 Pulley, Sir Joseph, Bart.,
90, *Piccadilly, W.*
-
- 1874 Quain, Sir Richard, Bart., M.D., F.R.S., F.R.C.P.,
67, *Harley-street, W.*
- 1888 Quirk, William Henry,
9, *Gracechurch-street, E.C.*
-
- 1883 Rabbidge, Richard, F.C.A.,
32, *Poultry, E.C.*
- 1872 *Rabino, Joseph,
(*Chief Manager*), *Imperial Bank of Persia, Teheran.*
- 1888 *Radcliffe, Sir David, J.P.,
Thurstaston Hall, near Birkenhead.
- 1858 *Radstock, The Right Honourable Lord,
Mayfield, Woolston, Southampton.
- 1888 Rae, George,
Redcourt, Birkenhead.
- 1885 RAE, JOHN, M.A.,
37, *Werter-road, Putney, S.W.*
- 1887 Raffalovich, His Excellency Arthur,
19, *Avenue Hoche, Paris.*
- 1877 Raikes, Lieut.-Col. George Alfred, F.S.A., F.R. Hist. Soc.,
63, *Belsize-park, Hampstead, N.W.*
- 1860 Ramsay, Alexander Gillespie, F.I.A.,
Canada Life Assurance Co., Hamilton, Canada West.
- 1885 Randell, James S.,
19, *Alfred-street, Bath.*
- 1880 Rankin, James, M.P.,
35, *Ennismore-gardens, Prince's-uate, S.W.*

Year of Election.	
1881	Raper, Sir Robert George, <i>Chichester.</i>
1884	Raphael, Alfred, 87, <i>Alexandra-road, N.W.</i>
1859	Rathbone, P. H., <i>Greenbank Cottage, Liverpool.</i>
1878	Rathbone, William, M.P., 18, <i>Prince's-gardens, Prince's-gate, S.W.</i>
1884	*Ravenscroft, Francis, <i>Birkbeck Bank, Chancery-lane, W.C.</i>
1874	*Ravenstein, Ernest George, F.R.G.S., 91, <i>Upper Tulse-hill, Brixton, S.W.</i>
1886	Rawlins, Frederick, <i>Southport, Queensland.</i>
1877	*Rawlins, Thomas, 45, <i>King William-street, E.C.</i>
1835	RAWSON, SIR RAWSON W., K.C.M.G., C.B. (<i>Honorary Vice-President</i>), 68, <i>Cornwall-gardens, Queen's-gate, S.W.</i>
1893	Rea, Charles Herbert Edmund, 223, <i>Norwood-road, Herne Hill, S.E.</i>
1888	Read, Thomas William, 40/42, <i>Castle-street, Liverpool.</i>
1889	*Reed, Thomas, F.C.A., 63, <i>King-street, South Shields.</i>
1888	Reid, Herbert Lloyd, <i>Ardentinney, Balham Park-road, Balham, S.W.</i>
1888	Rew, Robert Henry, 8, <i>Wharton-road, West Kensington, W.</i>
1886	Rhens, Robert, 20, <i>Fussett-square, Dalston, E.</i>
1888	Rhodes, George Webber, 131, <i>Wool Exchange, E.C.</i>
1890	Richards, Fred., 29, <i>Northampton-square, E.C.</i>
1892	Richards, Westley, J.P., <i>Ashwell, Oakham, Rutland.</i>
1892	Richardson, Hubert,
1888	Richardson, J. H., 8, <i>Finch-lane, Cornhill, E.C.</i>
1891	Ridge, Samuel H., B.A., F.R.G.S., F.R. Hist. S.
1873	Ripon, The Most Hon. the Marquess of, K.G., F.R.S. &c., 9, <i>Chelsea Embankment, S.W.</i>
1892	Rivington, Francis Hansard, 44, <i>Connaught-square, W.</i>
1887	Roberts, Arthur Herbert, F.C.A., F.R.G.S.,

Year of
Election.

- 1882 Roberts, Edward, F.R.A.S. (*Nautical Almanac Office*),
3, *Verulam-buildings, Gray's Inn, W.C.*
- 1890 Roberts, Sir William, M.D., F.R.S.,
8, *Manchester-square, W.*
- 1894 Robertson, James Barr,
3, *Whitehall-court, S.W.*
- 1885 Robertson, Thomas Stewart,
1, *Market-bldngs., Collins-street, W., Melbourne, Victoria.*
- 1887 Robinson, Henry James,
St. John's Villa, Woodlands, Isleworth, W.
- 1886 Roechling, Herman Alfred, A.M. Inst. C.E.,
23, *Highfield-street, Leicester.*
- 1880 *Ronald, Byron L.,
14, *Upper Phillimore-gardens, W.*
- 1873 *Rosebery, The Right Hon. the Earl of, LL.D., F.R.S.,
38, *Berkeley-square, W.*
- 1892 Ross, Charles Edmonstone,
Ness Villa. Simla, India.
- 1891 Ross, Frederick William Forbes, M.B., C.M.,
147, *Victoria-road, New Brighton, Cheshire.*
- 1893 Rothwell, Richard Pennefather,
27, *Park-place, New York, U.S.A.*
- 1865 Ruck, George Thomas,
The Hawthorns, Dorville-road, Lee, S.E.
- 1890 Ruffer, Marc Armand, M.A., M.D., B.Sc.,
5, *York-terrace, Regent's-park, N.W.*
- 1888 Rusher, Edward Arthur, F.I.A.,
142, *Holborn Bars, E.C.*
- 1886 Russell, Arthur B., A.C.A.,
11, *Ludgate hill, E.C.*; 16, *Dartmouth-park-road, N.W.*
- 1878 Russell, Richard F.,
8, *John-street, Adelphi, W.C.*
- 1887 Russell, Thomas, C.M.G.,
59, *Eaton-square, S.W.*
- 1890 Rutherford, Frederick William,
12, *King-street, Cheapside, E.C.*
- 1873 Rutherford-Elliot, J. G.,
Elphinstone, Tyndall's Park-road, Clifton, Bristol.
- 1894 Sachs, Edwin Otho,
11, *Waterloo-place, Pall Mall, S.W.*
- 1873 *Salisbury, The Most Hon. the Marquess of, K.G., P.C., F.R.S.,
20, *Arlington-street, W.*
- 1881 Salmon, James,
Tower Chambers, Finsbury-pavement,

Year of Election.	
1875	*Salomons, Sir David Lionel, Bart., J.P., <i>Broom-hill, Tunbridge Wells.</i>
1876	Salt, Thomas, <i>Weeping Cross, Stafford.</i>
1892	Samuel, Charles, <i>176, Sutherland-avenue, Harrow-road, W.</i>
1868	Samuelson, Sir Bernhard, Bart., M.P. F.R.S., <i>56, Prince's-gate, Hyde-park, S.W.</i>
1888	Sandell, Edward, F.C.A.,
1889	Sandell, Frederic David,
1891	Sarda, Pandit Har Bilas, B.A., M.R.A.S., <i>Government College, Ajmere, India.</i>
1886	Sauerbeck, Augustus, <i>4, Moorgate-street-buildings, E.C.</i>
1893	Saunders, Cecil Roy, F.I. Inst., <i>Downs House, Eling, Hants.</i>
1877	Saunders, Charles Edward, M.D., <i>County Asylum, Hayward's Heath, Sussex</i>
1852	Saunders, James Ebenezer, F.G.S., J.P., <i>9, Finsbury-circus, E.C.</i>
1888	Sawyer, Lucian Willard, <i>Billiter-square Buildings, E.C.</i>
1887	*Scarth, Leveson, M.A., <i>Keverstone, Manor-road, Bournemouth.</i>
1883	Schidrowitz, Samuel, <i>102, Oxford-gardens, Notting-hill, W.</i>
1877	Schiff, Charles, <i>22, Lowndes-square, S.W.</i>
1891	*Schloss, David F., M.A., <i>1, Knaresborough-place, Cromwell-road, S.W.</i>
1891	Schooling, John Holt, <i>Vine House, The Vineyard, Richmond-hill.</i>
1883	*Schwann, John Frederick, <i>Oakfield, Wimbledon, S.W., and 6, Moorgate-street, E.C.</i>
1892	Scofield, Ernest Frank, B.A.,
1885	Scott, James Henry, <i>St. Mildred's House, Poultry, E.C.</i>
1885	Scott, Rev. John Davidson, M.A., <i>The Vicarage, Cholmondeley, Malpas.</i>
1888	Scotter, Charles (General Manager, L. & S.W.R.), <i>Waterloo Station, Waterloo-road, S.E.</i>
1887	Seaton, Edward, M.D., Lond., F.R.C.P., <i>56, North-side, Clapham-common, S.W.</i>
1880	*Seeley, Charles, M.P., <i>Sherwood Lodge, Nottingham.</i>
1886	Seyd, Ernest J. F., <i>38, Lombard-street, E.C.</i>

Year of Election.	
1873	Seyd, Richard, 38, <i>Lombard-street, E.C.</i>
1888	Shaw, James Charles, 35, <i>Leinster-gardens, Hyde Park, W.</i>
1894	Shaw, William Arthur, M.A., 8, <i>Blandford-square, Regent's-park, N.W.</i>
1879	Shepherd, Wallwyn Poyer Burnett, M.A., 15, <i>Old Square, Lincoln's-inn, W.C.</i>
1885	Sherwin, Joseph Henry, 16, <i>Whitehall-place, S.W.</i>
1888	Shillcock, Joshua, M.A., <i>Bank of England, West Branch, Burlington-gardens, W.</i>
1888	Shuttleworth, Thomas G., <i>Royal Insurance-buildings, Church-street, Sheffield.</i>
1871	Sidgwick, Professor Henry, M.A., <i>Trinity College, Cambridge.</i>
1886	Silver, Stephen William, 3, <i>York-gate, Regent's-park, N.W.</i>
1878	Simmonds, G. Harvey, 1, <i>Whitehall, S.W.</i>
1892	*Sinclair, Captain John, M.P., 101, <i>Mount-street, Berkeley-square, W.</i>
1850	Singer, Charles Douglas, <i>Silverton, Silver-street, Enfield Town.</i>
1893	Sitta, Professore Dottor Pietro, <i>Corso Giovecca No. 84, Ferrara, Italy.</i>
1886	Sitwell, Sir George Reresby, Bart., M.P., J.P., <i>Renishaw Hall, Chesterfield.</i>
1882	Skinner, Charles Weeding, <i>Hill Crest, Theydon Bois, Essex.</i>
1881	Skrine, Francis Henry B., J.P., <i>c/o Messrs. King, Hamilton, and Co., Calcutta, India.</i>
1888	Slade, Alfred Thomas, <i>Wardrobe-chambers, Queen Victoria-street, E.C.</i>
1888	Slade, Francis William, 17, <i>Victoria-street, Westminster, S.W.</i>
1883	Sly, Richard Stevens, F.R.G.S., <i>Fern Villa, Queen's-road, New Cross Gate, S.E.</i>
1869	Smee, Alfred Hutcheson, M.R.C.S., <i>The Grange, Wallington, Surrey.</i>
1886	*Smith, Arthur Manley, 29, <i>Lincoln's Inn-fields, W.C.</i>
1878	*Smith, Charles, M.R.I.A., F.G.S., Assoc. Inst. C.E., <i>c/o Sir Henry Gilbert, F.R.S., Harpenden, St. Albans.</i>
1883	*Smith, The Hon. Sir Donald A., K.C.M.G., LL.D., 1157, <i>Dorchester-street, Montreal, Canada.</i>
1871	Smith, E. Cozens, 1, <i>Old Broad-street, E.C.</i>
1878	*Smith, George, LL.D., C.I.E., <i>Serampore House, Napier-road, Edinburgh.</i>

Year of Election.	
1889	Smith, George Armitage, M.A., 26, <i>Regent's Park-road, N.W.</i>
1888	Smith, H. Llewellyn, B.A., B.Sc. 49, <i>Beaumont-square, E.</i>
1877	Smith, Howard S., A.I.A., F.F.A. 37, <i>Bennett's Hill, Birmingham.</i>
1878	*Smith, James, <i>South Indian Railway, Trichinopoly, Madras Presidency.</i>
1893	*Smith, James McLaren Stuart, M.A., F.R.G.S., F.R.S.L., 3, <i>Elm-court, Temple, E.C.</i>
1891	Smith, James Parker, M.P., <i>Jordanhill, Partick, N.B.</i>
1877	Smith, John, 8, <i>Old Jewry, E.C.</i>
1883	Smith, Samuel, M.P., 11, <i>Delahay-street, Westminster, and Reform Club, S.W.</i>
1888	Smith, Walter J., 19, <i>West Smithfield, E.C.</i>
1890	Smith, William Alexander, J.P., 21, <i>Castlereagh-street, Sydney, New South Wales.</i>
1894	*Smith, The Hon. William Frederick Danvers, M.P., 3, <i>Grosvenor-place, S.W.</i>
1894	Smithers, Frederick Oldershaw, 171, <i>Adelaide-road, N.W.</i>
1887	Snell, Arthur Henry, 27, <i>Mincing-lane, E.C.</i>
1855	Sowray, John Russell, 2, <i>Princes-mansions, Victoria-street, S.W.</i>
1889	Speirs, Edwin Robert, 118, <i>Queen's-gate, South Kensington, S.W.</i>
1867	*Spencer, Robert James, 175, <i>King's-road, Southsea.</i>
1892	Sponder, John Alfred, M.A., 29, <i>Cheyne-walk, S.W.</i>
1883	Spicer, Albert, 50, <i>Upper Thames-street, E.C.</i>
1856	*Sprague, Thomas Bond, M.A., F.I.A., 26, <i>St. Andrew-square, Edinburgh.</i>
1872	Spriggs, Joseph, <i>Foxton, near Market Harborough.</i>
1882	Stack, Thomas Neville (<i>Crosby-bldgs., Crosby-square, E.C.</i>), 1, <i>St. Andrew-st., Dublin.</i>
1889	Stanton, Arthur G., 13, <i>Rood-lane, E.C.</i> , & 70, <i>Granville-park, Blackheath, S.E.</i>
1877	Staples, Sir Nathaniel Alexander, Bart., <i>Lissan, Cookstown, Tyrone, Ireland.</i>
1880	Stark, James, 17, <i>King's Arms-yard, E.C.</i>
1880	Stephens, William Davies, J.P. (Alderman), 4, <i>Abbotsford-terrace, Newcastle-on-Tyne.</i>

Year of Election.	
1882	*Stern, Edward D., 4, <i>Carlton-house-terrace, S.W.</i>
1885	Stevens, Marshall, <i>Highfield House, Urmston, near Manchester.</i>
1877	Stone, William Alfred, 90, <i>Cannon-street, E.C.; Hayton, Bramley Hill, Croydon.</i>
1889	Stow, Harry Vane, <i>National Liberal Club, Whitehall-place, S.W.</i>
1872	Strachey, General Richard, R.E., C.S.I., F.R.S., 69, <i>Lancaster-gate. W.</i>
1893	Strahan, Samuel Alexander Kenny, M.D., <i>Berry Wood, Northampton.</i>
1880	Strutt, Hon. Frederick, <i>Milford House, near Derby.</i>
1891	Stuart, Harold A., <i>Baikie, Ootacamund, Madras Presidency, India.</i>
1884	*Sugden, Richard, <i>The Farre Close, Brighouse, Yorkshire.</i>
1881	Sykes, George Samuel, 1, <i>Grant's-lane, Calcutta, India.</i>
1894	Tagliaferro, Napoleone, <i>Education Office, Malta.</i>
1859	*Tait, Patrick Macnaghten, F.R.G.S.,
1889	Tarling, Charles, 1, <i>Gresham-buildings, E.C.</i>
1889	Tattersall, William, <i>Hazelwood, Hale, Cheshire.</i>
1889	Taylor, Stephen Seaward (Alderman), 151, <i>Brixton-road, S.W.</i>
1887	Taylor, R. Whately Cooke, 8, <i>Spencer-road, Coventry.</i>
1888	*Taylor, Theodore Cooke, J.P., <i>Sunny Bank, Batley, Yorkshire.</i>
1893	Teece, Richard, F.I.A., F.F.A., <i>c/o H. S. King & Co., 65, Cornhill, E.C.</i>
1884	Tempany, Thomas William, F.R.H.S., 25, <i>Bedford-row, W.C.</i>
1888	Temperley, William Angus, jun., 2, <i>St. Nicholas-buildings, Newcastle-on-Tyne</i>
1891	Terrey, William, <i>Sheffield Water Department, Sheffield.</i>
1888	Theobald, John Wilson, 85, <i>Palmerston-buildings, E.C.</i>

Year of Election.	
1889	Thodey, William Henry, 479, <i>Collins-street, Melbourne, Victoria.</i>
1888	Thomas, David Alfred, M.P., <i>Llanwern, near Newport, Mon.</i>
1887	Thomas, John, 18, <i>Wood-street, E.C.</i>
1879	Thomas, W. Cave, 8, <i>Fitzroy-street, Fitzroy-square, W.</i>
1864	*Thompson, Henry Yates, 26a, <i>Bryanston-square, W.</i>
1868	Thomson, James, 35, <i>Nicholas-lane, E.C.</i>
1871	Thomson, Thomas D., 57, <i>Moorgate-street, E.C.</i>
1890	Thring, The Right Hon. Lord, K.C.B., 5, <i>Queen's Gate-gardens, S.W.</i>
1882	Tinker, James, <i>Hordlecliff, Lymington, Hants.</i>
1879	Tipping, William, <i>Oakfield House, Ashton-under-Lyne.</i>
1889	Touch, George Alexander, 26, <i>Compayne-gardens, West Hampstead.</i>
1868	*Treatt, Frank Burford, J.P., <i>Fermount, Bellenger River, New South Wales.</i>
1868	Tritton, Joseph Herbert, 54, <i>Lombard-street, E.C.</i>
1892	Trobridge, Arthur, <i>Bloxidge House, Langley Green, near Birmingham.</i>
1887	Tunley, George, 3, <i>Foley-avenue, Hampstead, N.W.</i>
1878	Turnbull, Alexander, 118, <i>Belsize-park-gardens, N.W.</i>
1890	*Turner, Rev. Harward, B.Sc., F.R.M.S., 27, <i>Quai d'Austerlitz, Paris.</i>
1885	Turner, William, <i>Board of Trade, Cardiff.</i>
1892	Tyler, Edgar Alfred, 3, <i>Eastcheap, E.C.</i>
1841	Tyndall, William Henry, F.I.A., <i>Morlands, Oxford-road, Redhill.</i>
1893	Tyrer, Thomas, F.I.C., F.C.S., <i>Stirling Chemical Works, Stratford, E.</i>
1877	*Urlin, Richard Denny, 22, <i>Stafford-terrace, Phillimore-gardens, W.</i>

Year of Election.	
1888	Van Raalte, Marcus, 22, <i>Austin Friars, E.C.</i>
1890	Venn, John, D.Sc., F.R.S., <i>Caius College, Cambridge.</i>
1889	Venning, Charles Harrison, 39, <i>Victoria-street, Westminster, S.W.</i>
1888	Verdin, William Henry, J.P., <i>Winsford, Cheshire.</i>
1894	Verney, Frederick William, 6, <i>Onslow-gardens, S.W.</i>
1886	Vernon, The Right Hon. Lord,
1876	Vigers, Robert, 4, <i>Frederick's-place, Old Jewry, E.C.</i>
1885	Vincent, Frederick James, A.I.A., 38, <i>Queen's-road, South Hornsey, N.</i>
1877	Vine, Sir John Richard Somers, C.M.G., <i>Queen Ann's Mansions, S.W.</i>
1890	Walford, Ernest L., 2, <i>Shorter's-court, E.C.</i>
1890	Walkley, William Henry, 265, <i>Kentish Town-road, N.W.</i>
1868	Wallis, Charles James, 97, <i>Ridgmount-gardens, W.C.</i>
1880	Wallis, E. White, 49, <i>Clifton-hill, St. John's Wood, N.W.</i>
1888	Walmsley, Frederic, 1, <i>Fennel-street, Manchester.</i>
1876	Walter, Arthur Fraser, <i>Finchampstead, Wokingham, Berks.</i>
1879	Wansey, Arthur H., <i>Sambourne, Stoke Bishop, Bristol.</i>
1893	Ward, William Cullen, 12, <i>Wynyard-square, Sydney, N.S.W.</i>
1888	Warren, Reginald Augustus, J.P., <i>Preston-place, near Worthing.</i>
1888	Wartnaby, William Wade, <i>Market Harborough, Leicestershire.</i>
1886	Waters, Alfred Charles, <i>General Register Office, Somerset House, Strand, W.C.</i>
1865	Waterhouse, Edwin, B.A., A.I.A., F.C.A., 44, <i>Gresham-street, E.C.</i>
1892	Wates, C. Marshall, 1, <i>Vernon Chambers, Southampton-row, W.C.</i>
1894	Watson, Thomas Roberts, "Burnleigh," <i>Sussex-road, Southport</i>
1883	Watson, T. Wilkinson, 183, <i>West George-street, Glasgow.</i>

Year of Election	
1883	Watson, William Livingstone, 35a, <i>St. James'-street, S.W.</i>
1885	* Watt, William, 17, <i>Queen's-road, Aberdeen.</i>
1888	Webb, Henry Barlow, <i>Holmdale, Dorking.</i>
1893	Weedon, Thornhill, <i>Hawthorne-street, Woolloongabba, Brisbane, Queensland.</i>
1873	* Welby of Allington, The Right Hon. Lord, K.C.B., <i>The Treasury, Whitehall, S.W.</i>
1874	Welch, Charles, F.S.A., <i>Guildhall, E.C. (Representing the Library Committee of the Corporation of the City of London.)</i>
1890	Weller, William Hamilton, <i>Roseleigh, Tolworth, near Surbiton, Surrey.</i>
1889	Wells-Smith, Henry, A.C.A., 8, <i>Norfolk-row, Sheffield.</i>
1855	Welton, Thomas Abercrombie <i>Rectory Grove House, Clapham, S.W.</i>
1879	Wenley, James Adams, <i>Bank of Scotland, Bank-street, Edinburgh.</i>
1879	* Westlake, John, Q.C., LL.D., <i>The River House, 3, Chelsea Embankment, S.W.</i>
1882	* Whadcoat, John Henry, F.C.A., 18, <i>Highbury-crescent, N.</i>
1883	* Whadcoat, William Edward, 54, <i>Carleton-road, Tufnell-park, N.</i>
1878	Wharton, James, <i>Edgehill, Netherhall-gardens, FitzJohn's-avenue, N.W.</i>
1887	Whinney, Frederick, 8, <i>Old Jewry, E.C.</i>
1859	Whitbread, Samuel, M.P., 10, <i>Ennismore-gardens, Princes-gate, S.W.</i>
1887	* White, The Rev. George Cecil, M.A., <i>Nursling Rectory, Southampton.</i>
1863	White, Leedham, 16, <i>Wetherby-gardens, South Kensington, S.W.</i>
1871	White, William, 23, <i>Wynell-road, Forest-hill, S.E.</i>
1888	Whitehead, Sir James, Bart., M.P., J.P., D.L. (Alderman) 9, <i>Cambridge-gate, Regent's-park, N.W.</i>
1892	Whitelegge, Benjamin A., M.D., 10, <i>St. John's-square, Wakefield.</i>
1884	Whiteley, William, <i>Westbourne-grove, Bayswater, W.</i>
1879	* Whitwill, Mark, J.P., <i>Bristol.</i>
1884	Wightman, Charles, 1, <i>Fenchurch-avenue, E.C.</i>
1888	Wilkinson, James H.,

Year of
Election.

- 1893 Wilkinson, Rev. John Frome, M.A.,
Kilvington, Orston, Nottingham.
- 1875 Wilkinson, Thomas Read,
Manchester and Salford Bank, Manchester.
- 1860 Willans, John Wrigley,
Mercury Office, Leeds.
- 1894 Williams, Edward Frederick,
Joint Stock Bank, Halifax.
- 1894 Williams, Frederick Bessant, F.S.A. (Scot.),
19, *Haymarket, S.W.*
- 1881 *Williams, Henry Maunder,
186, *New Cross-road, S.E.*
- 1870 Williams, Henry Reader,
6, *Lime-street, E.C., and The Priory, Hornsey, N.*
- 1888 *Williams, Robert, Jun.,
20, *Birchin-lane, E.C.*
- 1888 Williamson, John W.,
5, *Stone-buildings, Lincoln's Inn, W.C.*
- 1891 Wilson, Henry Joseph, M.P.,
Osgathorpe Hills, Sheffield.
- 1884 Wilson, James (*Deputy Commissioner*),
Shahpur, Panjab, India.
- 1874 *Wilson, Robert Porter,
5, *Cumberland-terrace, Regent's-park, N.W.*
- 1890 Winter, Alexander,
- 1887 Woodhouse, Coventry Archer,
30, *Mincing-lane, E.C.*
- 1888 Woolfe, Thomas Rodriques, A.C.A.,
65, *Watling-street, E.C.*
- 1890 Woolcombe, Robert Lloyd, LL.D., F.I. Inst., M.R.I.A.,
14, *Waterloo-road, Dublin.*
- 1890 Worroll, Charles,
Colonial Mutual Life Office, Adderley-street, Cape Town.
- 1878 Worsfold, Rev. John Napper, M.A.,
Haddlesey Rectory, near Selby, Yorkshire.
- 1887 Worthington, A. W., B.A.,
Old Swinford, Stourbridge.
- 1880 Wren, Walter, M.A.
7, *Powis-square, W.*

Year of
Election.

1886	YERBURGH, ROBERT ARMSTRONG, M.P., 27, <i>Princes Gate, S.W.</i>
1888	*Yglesias, Miguel, 2, <i>Tokenhouse-buildings, E.C.</i>
1877	*Youll, John Gibson, <i>Jesmond-road, Newcastle-on-Tyne.</i>

* * * *The Executive Committee request that any inaccuracy in the foregoing list may be pointed out to the ASSISTANT SECRETARY, and that all changes of address may be notified to him, so that delay in forwarding communications and the publications of the Society may be avoided.*

HONORARY FELLOWS.

HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G.

Honorary President.

Argentine Republic.

Year of
Election.

1890. DR. FRANCISCO LATZINA, **Calle Maipu, 982, Buenos Ayres.**
 Director General of Statistics; Doctor *honoris causa* of the Faculty of Physical and Mathematical Sciences of the University of Cordoba; Knight of the Italian Order of S.S. Maurice and Lazare; Officer of the Academy of France; Member of the National Academy of Sciences, of the International Statistical Institute, of the Geographical and Statistical Societies of Paris, of the Society of Commercial Geography of Paris, and Corresponding Member of the National Historical Academy of Venezuela.

Austria and Hungary.

1890. DR. KARL THEODOR VON INAMA-STERNEGG, **Vienna.**
 Doctor of Political Economy; Member of the Austrian House of Lords; President of the Imperial and Royal Central Statistical Commission; Professor at the University of Vienna.
1893. DR. JOSEPH DE JEKELFALUSSY, **Budapest.**
 Doctor *Juris*; Advocate; Chief of the Royal Hungarian Statistical Bureau; Ministerial Councillor; Knight of the Order of Francis Joseph; Second Vice President of the Royal Hungarian Statistical Council; External Member of the Committee of Examiners for Political Sciences; Corresponding Member of the Hungarian Academy of Sciences.
1893. DR. FRANZ RITTER VON JURASCHEK, **Kärnthnerstrasse, 55, Vienna.**
 Doctor *Juris et Philosophiæ*; "K.K. Regierungsrath;" Member and Secretary of the Imperial and Royal Central Statistical Commission; Professor at the University of Vienna; Professor of Public Law and of Statistics at the Military Academies, Vienna; Knight of the Austrian Order of the Iron Crown (3rd Class); Officer of the Order of the Crown of Italy; Member of the Permanent Commission for Commercial Values; of the International Statistical Institute; and of the British Economic Association.

Year of
Election.

1893. JOSEPH KÖRÖSI, **Budapest.**

Director of the Municipal Statistical Bureau of Budapest; *Docent* at the University of Budapest; President of the Municipal Statistical Committee; Knight of Several Orders; Member of the Statistical Commissions of Hungary, Belgium, and Nijni-Novgorod; Honorary Member of the American Statistical Associations; Member of the Hungarian Academy of Science, of the International Statistical Institute, of the Statistical Societies of Manchester and Paris, of the British Economic Association, and of several other learned Societies.

1877. MAX WIRTH, **Dreihufeisengasse. 1, Vienna.**

Economist; formerly Director of the Federal Statistical Bureau of Switzerland; Co-Editor of the "Neue Freie Presse."

Belgium.

1879. DR. EUGÈNE JANSSENS, **Rue du Lombard, 21, Brussels.**

Doctor of Medicine; Chief Inspector of the Board of Health of the City of Brussels; President of the Federal Committee of Health of the Brussels District; Member of the Central Statistical Commission, of the Superior Council of Health, of the Royal Academy of Medicine, and of the Local Medical Commission; Officer of the Belgian Order of Leopold and of the Italian Order of SS. Maurice and Lazare; Knight of the French Legion of Honour; Civic Cross of the 1st Class; Officer of the Academy of France; Associate of the Statistical Society of Paris and of the International Statistical Institute.

China.

1890. SIR ROBERT HART, Baronet, G.C.M.G., LL.D., **Peking.**

Inspector-General of Imperial Maritime Customs, China.

Denmark.

1878. VIGAND ANDREAS FALBE-HANSEN, **Copenhagen.**

Professor of Political Economy at the University of Copenhagen.

1852. DR. PETER ANTON SCHLEISNER, **Frederiksberg, Copenhagen.**

Doctor of Medicine, State Councillor; Knight and Bachelor of the Order of the "Dannebrog," and Knight of the Swedish Order of the North Star; President of the Royal Danish Institute of Vaccination; Member of the Royal Danish General Board of Health.

France.

Year of
Election.

1880. DR. JACQUES BERTILLON, **1, Avenue Victoria, Paris.**
 Doctor of Medicine; Chief of the Statistical Department of the City of Paris; Member of the Superior Council of Statistics; of the Consultative Committee of Public Hygiene of France; and of the Statistical Society of Paris, &c.
1856. MAURICE BLOCK, **63, Rue de l'Assomption, Paris.**
 Knight of the Legion of Honour, and of Orders of Sweden, Russia, Prussia, Bavaria, Austria-Hungary, Greece, Italy, and Portugal; Member of the Institute of France, of the Superior Council of Statistics, of the International Statistical Institute, of the Society of Political Economy of Paris, and of many Academies and Scientific Societies.
1879. DR. ARTHUR CHERVIN, **82, Avenue Victor Hugo, Paris.**
 Doctor of Medicine and Surgery; Director of the Paris Institute for Stammerers; Member of the Superior Council of Statistics and of the International Statistical Institute, &c.
1878. MAXIMIN DELOCHE, **5, Rue Herschel, Paris.**
 Honorary Director of the General Statistics of France; Commander of the Legion of Honour; Officer of the Order of Public Instruction; Commander of the Austrian Order of Francis Joseph; Member of the Institute of France, and of several learned societies.
1890. ALFRED DE FOVILLE, **Hotel des Monnaies, Paris.**
 Master of the Mint; Professor at the National Conservatoire of Arts and Trades (Chair of Industrial Economy and Statistics); Officer of the Legion of Honour; Laureate of the Institute of France; Past President of the Statistical Society of Paris; Member of the International Statistical Institute and of the Superior Council of Statistics.
1870. DR. CLÉMENT JUGLAR, **167, Rue St. Jacques, Paris.**
 Member of the Institute of France; Past President of the Statistical Society of Paris; Vice-President of the Society of Political Economy of Paris.
1860. PIERRE ÉMILE LEVASSEUR, **26, Rue Monsieur le Prince, Paris.**
 Member of the Institute of France; Professor at the College of France and at the Conservatoire of Arts and Trades; President of the Statistical Commission for Primary Instruction; Past President of the Statistical Society of Paris; Vice-President of the International Statistical Institute, of the Superior Council of Statistics, and of the Society of Political Economy, &c.

Year of
Election.

France—Contd.

1880. **JEAN BAPTISTE LÉON SAY, Paris.**
Deputy ; Ex-Minister of Finance ; Member of the Institute of France ; President of the Society of Political Economy of Paris ; Past President of the Statistical Society of Paris, of the National Society of Horticulture, and of the National Society of Agriculture.
1887. **DANIEL WILSON, 2, Avenue d'Jéna, Paris.**
Deputy ; Ex-Under-Secretary of State ; Past President of the Statistical Society of Paris.
1876. **THE PRESIDENT (for the time being) OF THE STATISTICAL SOCIETY OF PARIS, 28, Rue Danton, Paris.**

Germany.

1871. **SIR HENRY PAGE-TURNER BARRON, Baronet, C.M.G.**
Late British Minister-Resident to the King of Wurttemberg.
1878. **DR. KARL BECKER, Im Grossherzogth. Oldenburg.**
"Wirklicher Geheimer Ober-Regierungsrath ;" late Director of the Imperial Statistical Bureau of the German Empire ; Honorary Doctor of the University of Tübingen ; Corresponding Member of the Central Statistical Commission of Belgium ; Honorary Member of the Geographical and Statistical Society of Frankfort, of the Statistical Society of Switzerland, and of the International Statistical Institute, Associate of the Statistical Society of Paris.
1890. **KARL JULIUS EMIL BLENCK, Lindenstrasse, 28, Berlin, S.W.**
"Geheimer Ober-Regierungsrath ;" Director of the Royal Statistical Bureau of Prussia, also Member of the Prussian Central Statistical Commission and of the Central Board of Control of the Survey of Prussia ; Honorary Member or Members of several learned Societies.
1854. **DR. ERNST ENGEL, Oberlosnitz, Radebeul, bei Dresden.**
"Geheimer Ober-Regierungsrath ;" formerly Director of the Royal Statistical Bureau of Prussia ; Member of several learned Societies.
1877. **DR. GEORG VON MAYR, Kaiser Wilhelmstrasse, 5, Strassburg.**
Ex-Under Secretary of State in the Imperial Ministry for Alsace-Lorraine ; formerly Director of the Royal Statistical Bureau of Bavaria ; Honorary Member of the International Statistical Institute ; Associate of the Statistical Society of Paris.
1893. **DR. FRIEDRICH WILHELM HANS VON SCHEEL, Lützow-Ufer, 6/8, Berlin, W.**
"Kaiserlicher Geheimer Regierungsrath ;" Doctor *Juris et philosophiæ* ; Director of the Imperial Statistical Bureau of the German Empire ; formerly Professor of Political Economy and Statistics at the University of Bern ; Honorary Member of the Statistical and Social Inquiry Society of Ireland.

Year of
Election.

Germany—Contd.

1860. DR. GEORG KARL LEOPOLD SEUFFERT, **Maximiliansplatz, Nr. 9/3, Munich.**
Formerly Chief Inspector and Director of the Royal Custom-House at Simbach; Knight of the Bavarian Order of St. Michael 1st Class.
1876. THE PRESIDENT (for the time being) OF THE GEOGRAPHICAL AND STATISTICAL SOCIETY OF FRANKFORT. **Stadtbibliothek, Frankfort.**

Italy.

1879. DR. GEROLAMO BOCCARDO, **Piazza Santi Apostoli, 74, Rome.**
Senator; Councillor of State; Doctor of Laws; late Professor at the University and at the Superior Naval School of Genoa; Grand Officer of the Orders of SS. Maurice and Lazare, and of the Crown of Italy; Knight of the Order of Civil Merit of Savoy; Member of the Academy "dei Lincei," of the Academy of Naples, of the Institutes of Science of Milan, Venice, and Palermo; of the Cobden Club, of the International Statistical Institute, of the Academy of Madrid, and of the Deputation of National History, &c.
1874. DR. LUIGI BODIO, **Rome.**
Doctor of Laws; Professor of Industrial Legislation and of Statistics at the Engineering College, Rome; Director-General of the Statistical Department of the State; Grand Officer of the Order of SS. Maurice and Lazare; Knight of the Order of Civil Merit of Savoy; Correspondent of the Institute of France (Academy of Moral and Political Sciences).
1880. DR. LUIGI COSSA, LL.D., **University of Pavia.**
Professor of Political Economy; Commander of the Order of the Crown of Italy; Officer of the Order of SS. Maurice and Lazare; Member of the Cobden Club; Honorary Member of the American Economic Association; Ordinary Member of the Academy "dei Lincei" and of the Royal Institute of Sciences of Milan, Correspondent of the Royal Academies of Lisbon, Modena, Turin, Naples, &c.
1845. FRANCESCO FERRARA, **Venice.**
Senator; Professor and Director of the Royal Superior School of Commerce at Venice; late Minister of Finance; Member of the Academy "dei Lincei."
1880. ANGELO MESSEDAGLIA, **Rome.**
Senator; Professor of Statistics at the Royal University of Rome; Member of the Academy "dei Lincei."
1868. THE MARQUIS ERMENEGILDO DEI CINQUE QUINTILI, **Rome.**
Advocate; General Secretary of the Hospitals Commission of Rome.

Netherlands.

Year of
Election.

1893. DR. VERKERK WILLIAM ARNOLD PETER PISTORIUS, **The Hague.**

Director of the Statistical Bureau of the Department of Finance; Director General of Direct Taxation, Customs and Excise.

Russia.

1873. HIS EXCELLENCY PIERRE SEMENOFF (SEMENOW), **St. Petersburg.**

Senator; Privy Councillor to His Imperial Majesty; President of the Imperial Statistical Council; President of the Imperial Geographical Society; Honorary Member of the Academy of Sciences in St. Petersburg; Associate of the Statistical Society of Paris.

1890. HIS EXCELLENCY NICOLAS TROÏNITSKY, **25, Rue Kirotschnaia, St. Petersburg.**

Former Governor; Privy Councillor; Director of the Central Statistical Committee of the Ministry of the Interior; Life Member of the Statistical Council, of the Imperial Geographical Society of Russia, and of the International Statistical Institute, and Member of the Statistical Society of Paris.

Spain.

1845. HIS EXCELLENCY SEÑOR DON JOSÉ MAGAZ Y JAYME **Calle de Leon, 13, Madrid.**

Advocate, Gentleman of His Majesty's Chamber, and Member of the Council of State; Ex-Deputy of the Cortes; Ex-Senator; Ex-Director-General of Treasury; Ex-Under-Secretary of the Ministry of Finance; Grand Cross of the Order of Isabella Catolica; Commander of the Order of Carlos 3°.

Sweden and Norway.

1858. DR. THORKIL HALVORSEN ASCHEHOUG, **41, Josephinegade, Christiania.**

Doctor of Laws; Professor of Political Economy at the University of Christiania; Assessor Extraordinary of the Supreme Court of Norway; Commander of the First Class of the Norwegian Order of St. Olave, of the Swedish Order of the North Star; and of the Danish Order of the "Dannebrog;" Corresponding Member of the Institute of France; Member of the Institute of International Law, of the International Statistical Institute, and of the Academies of Christiania, Stockholm, Trondhjem and Upsala, also of the Royal Historical Society of Denmark.

1874. ANDERS NICOLAI KLÆR, **Christiania.**

Director of the Central Statistical Bureau of Norway; Associate of the Statistical Society of Paris.

1860. THOMAS MICHELL, Esq., C.B., **Christiania.**

Her Majesty's Consul-General for Norway.

Year of
Election.

1890. DR. ELIS SIDENBLADH., Ph.D., **Stockholm.**

Director in Chief of the Central Statistical Bureau of Sweden ; President of the Royal Statistical Commission ; Commander, Officer, and Knight of several Swedish and Foreign Orders ; Member of the Royal Academies of Sciences and of Agriculture, at Stockholm ; Honorary and Corresponding Member of several foreign learned Societies.

Switzerland.

1890. DR. LOUIS GUILLAUME, **Bern.**

Doctor of Medicine ; Director of the Federal Statistical Bureau ; Secretary of the International Penitentiary Commission.

United States.

1873. THE HON. WILLIAM BARNES, **Thurlow-terrace, Albany, N.Y.**

Lawyer ; Ex-Superintendent of the Insurance Department, State of New York.

1881. DR. JOHN SHAW BILLINGS, **Army Medical Museum, Washington.**

A.M., M.D., LL.D., Edinburgh and Harvard ; D.C.L., Oxon ; Surgeon, U.S. Army ; Member of the National Academy of Sciences, &c.

1890. DR. RICHMOND MAYO-SMITH, M.A., Ph.D., **Columbia College, New York.**

Professor of Political Economy and Social Science in Columbia College ; Vice-President of the American Statistical Association ; Member of the International Statistical Institute, and of the National Academy of Sciences.

1870. THE HON. JOHN ELIOT SANFORD, **Taunton, Mass.**

Lawyer ; Ex-Speaker of the House of Representatives ; Ex-Insurance Commissioner ; Ex-Chairman of the Board of Harbour and Land Commissioners ; Chairman of the Board of Railroad Commissioners.

1876. DR. FRANCIS AMASA WALKER, Ph.D., LL.D., **Boston, Mass.**

Formerly Superintendent of the United States Census ; President of the Massachusetts Institute of Technology ; Member of the International Statistical Institute and "Président Adjoint" for the Meeting of 1893 ; Correspondent of the Institute of France ; President of the American Statistical Association ; Ex-President of the American Economic Association ; Vice-President of the National Academy of Sciences, Washington ; Corresponding Member of the Central Statistical Commission of Belgium.

Year of
Election.

1870. THE HON. DAVID AMES WELLS, D.C.L., LL.D., M.D., **Norwich, Conn.**

Economist. Late Special Commissioner of Revenue of the United States; Chairman of Commission for the Revision of Taxes of the State of New York; Lecturer on the Principles and Practice of Taxation, Harvard University, Cambridge, United States; Member of the Board of Arbitration of American Railways; President, National Board of Visitors of the U.S. Military Academy of West Point; President of the American Social Science Association, and of the American Free Trade League; Chairman in 1883 of the Department of Finance of the American Social Science Association; Corresponding Member of the Institute of France, to fill vacancy occasioned by the death of John Stuart Mill; Corresponding Member of the Academy "dei Lincei," Rome; Member of the American Academy of Arts and Sciences, Boston; Honorary Member of the Cobden Club; Gold Medallist "Exposition Universelle, France, 1889, Groupe de l'Economie Sociale."

1893. THE HON. CARROLL DAVIDSON WRIGHT, **Washington.**

Commissioner of the U.S. Department of Labour; late Chief of the Massachusetts Bureau of Statistics of Labour; President of the Association for the promotion of Profit Sharing; late President and now Vice-President of the American Social Science Association; Vice-President of the American Statistical Association; Member of the American and British Economic Associations, of the International Statistical Institute, and of several other learned Societies.

India.

1886. JAMES EDWARD O'CONOR, Esq., C.I.E., **Calcutta and Simla.**
Assistant Secretary with the Supreme Government, India,
Department of Finance and Commerce.

Dominion of Canada.

1894. GEORGE JOHNSON, Esq., **Ottawa.**
Statistician, Department of Agriculture, Ottawa, Canada.

1877. DR. EDWARD YOUNG, A.M., Ph.D., **Windsor, Nova Scotia.**
Consul of the United States, formerly Chief of the Bureau of Statistics, United States of America; Member of the Geographical Society of Paris.

New South Wales.

Year of
Election.

1893. **TIMOTHY AUGUSTINE COGHLAN, Esq., Sydney.**
Government Statistician of New South Wales and Registrar of Friendly Societies and Trade Unions; formerly Assistant Engineer for Harbours and Rivers.
1876. **EDWARD GRANT WARD, Esq., J.P., Sydney.**
Registrar-General; Chairman of Board of Land Titles Commissioners.

New Zealand.

1876. **SIR JAMES HECTOR, K.C.M.G., M.D., F.R.S.S. L. and E., F.G.S., &c., Wellington.**
Director of the Geological Survey, of the Meteorological Department, and of the New Zealand Institute, &c.

Tasmania.

1894. **ROBERT MACKENZIE JOHNSTON, Esq., Hobart.**
Registrar-General and Government Statistician; Fellow and Member of Council of the Royal Society of Tasmania; Member of Council and of Senate of the University of Tasmania; Fellow and Past President of Section F (*Economics and Statistics*) of the Australasian Association for the Advancement of Science; Fellow of the Royal Geographical Society of Australia; Honorary Foreign Corresponding Member of the Geological Society of Edinburgh; Fellow of the Linnean Society of London.
1876. **EDWIN CRADOCK NOWELL, Esq., J.P., Hobart.**
Clerk of Executive and Legislative Councils of Tasmania; late Government Statistician; Clerk to the Federal Council of Australasia in its four Sessions.

Victoria.

1858. **WILLIAM HENRY ARCHER, Esq., K.C.P., K.S.G., F.I.A. F.L.S., &c., Grace Park, Hawthorne, Melbourne.**
Barrister-at-Law.
1875. **HENRY HEYLYN HAYTER, Esq., C.M.G., Melbourne.**
Government Statist of Victoria; Officer of the French Order of Public Instruction; Chevalier of the Order of the Crown of Italy; Honorary Member of the Statistical and Social Inquiry Society of Ireland, of the Statistical Association of Tokio, of the Royal Society of Tasmania, of the Trinity Historical Society of Texas, and of the Intercolonial Medical Congress of Australasia; Honorary Corresponding Member of the Society of Arts, London, of the Statistical Society of Manchester, of the American Statistical Association, Boston, of the Commercio-Geographical Society of Berlin, of the Geographical Society of Bremen, and of the Royal Society of South Australia; Honorary Fellow of the Royal Colonial Institute; Honorary Foreign Member of the Statistical Society of Paris; Representative Member for Victoria of the International Statistical Institute.

Great Britain and Ireland.

Year of
Election.

1876. THE PRESIDENT (for the time being) OF THE MANCHESTER
STATISTICAL SOCIETY, **63, Brown Street, Manchester.**

1876. THE PRESIDENT (for the time being) OF THE STATISTICAL
AND SOCIAL INQUIRY SOCIETY OF IRELAND, **35, Moles-
worth Street, Dublin.**

NOTE.—The Executive Committee request that any inaccuracies in the foregoing List of HONORARY FELLOWS may be pointed out, and that all changes of address may be notified to the Secretary, so that delay in forwarding communications and the publications of the Society may be avoided.

ROYAL STATISTICAL SOCIETY.

Copy of Charter.

Victoria, by the Grace of God of the United Kingdom of Great Britain and Ireland Queen, Defender of the Faith.

To all to whom these Presents shall come, Greeting:—

Whereas Our Right trusty and entirely beloved cousin, Henry, Third Marquess of Lansdowne, Knight of the Most Noble Order of the Garter, Charles Babbage, Fellow of the Royal Society, John Elliott Drinkwater, Master of Arts, Henry Hallam, Fellow of the Royal Society, the Reverend Richard Jones, Master of Arts, and others of Our loving subjects, did, in the year One thousand eight hundred and thirty-four, establish a Society to collect, arrange, digest and publish facts, illustrating the condition and prospects of society in its material, social, and moral relations; these facts being for the most part arranged in tabular forms and in accordance with the principles of the numerical method, and the same Society is now called or known by the name of “The “Statistical Society.”

And Whereas it has been represented to Us that the same Society has, since its establishment, sedulously pursued such its proposed objects, and by its publications (including those of its transactions), and by promoting the discussion of legislative and other public measures from the statistical point of view, has greatly contributed to the progress of statistical and economical science.

And Whereas distinguished individuals in foreign countries, as well as many eminent British subjects, have availed themselves of the facilities offered by the same Society for communicating important information largely extending statistical knowledge; and the general interest now felt in Statistics has been greatly promoted and fostered by this Society.

And Whereas the same Society has, in aid of its objects, collected a large and valuable library of scientific works and charts, to which fresh accessions are constantly made; and the said Society has hitherto been supported by annual and other subscriptions and contributions to its funds, and has lately acquired leasehold premises in which the business of the said Society is carried on.

And Whereas in order to secure the property of the said Society, to extend its operations, and to give it its due position among the Scientific Institutions of Our kingdom, We have been besought to grant to Sir Rawson William Rawson, Knight Com-

mander of the Most Distinguished Order of St. Michael and St. George, and Companion of the Most Honourable Order of the Bath, and to those who now are Members of the said Society, or who shall from time to time be elected Fellows of the Royal Statistical Society hereby incorporated, Our Royal Charter of Incorporation for the purposes aforesaid.

1. **Now Know Ye** that We, being desirous of encouraging a design so laudable and salutary, of Our especial grace, certain knowledge and mere motion, have willed, granted, and declared and Do by these Presents, for Us, Our heirs and successors, will, grant, and declare that the said Sir Rawson William Rawson, Knight Commander of the Most Distinguished Order of St. Michael and St. George, and Companion of the Most Honourable Order of the Bath, and such other of Our loving subjects as now are Members of the said Society, or shall from time to time be elected Fellows of "The Royal Statistical Society" hereby incorporated according to such regulations or bye laws as shall be hereafter framed or enacted, and their successors, shall for ever hereafter be by virtue of these presents one body politic and corporate, by the name of "**The Royal Statistical Society,**" and for the purposes aforesaid, and by the name aforesaid, shall have perpetual succession and a common seal, with full power and authority to alter, vary, break, and renew the same at their discretion, and by the same name to sue and be sued, implead and be impleaded, answer and be answered, unto and in every Court of Us, Our heirs and successors.

2. **The** Royal Statistical Society, in this Charter hereinafter called "The Society," may, notwithstanding the statutes of mortmain, take, purchase, hold and enjoy to them and their successors a hall, or house, and any such messuages or hereditaments of any tenure as may be necessary, for carrying out the purposes of the Society, but so that the yearly value thereof to be computed at the rack rent which might be gotten for the same at the time of the purchase or other acquisition, and including the site of the said hall, or house, do not exceed in the whole the sum of Two thousand pounds.

3. **There** shall be a Council of the Society, and the said Council and General Meetings of the Fellows to be held in accordance with this Our Charter shall, subject to the provisions of this Our Charter, have the entire management and direction of the concerns of the Society.

4. **There** shall be a President, Vice-Presidents, a Treasurer or Treasurers, and a Secretary or Secretaries of the Society. The Council shall consist of the President, Vice-Presidents, and not

less than twenty Councillors; and the Treasurer or Treasurers and the Secretary or Secretaries if honorary.

5. **The** several persons who were elected to be the President, Vice-Presidents, and Members of the Council of the Statistical Society at the Annual Meeting held in the month of June, One thousand eight hundred and eighty-six, shall form the first Council of the Society, and shall continue in office until the first Election of officers is made under these presents as hereinafter provided.

6. **General** Meetings of the Fellows of the Society may be held from time to time, and at least one General Meeting shall be held in each year. Every General Meeting may be adjourned, subject to the provisions of the Bye Laws. The following business may be transacted by a General Meeting, viz.:—

- (a.) The Election of the President, Vice-Presidents, Treasurer or Treasurers, Secretary or Secretaries, and other Members of the Council of the Society.
- (b.) The making, repeal, or amendment of Bye Laws.
- (c.) The passing of any proper resolution respecting the affairs of the Society.

7. **Bye Laws** of the Society may be made for the following purposes, and subject to the following conditions, viz.:—

- (a.) For prescribing the qualification and condition of tenure of office of the President; the number, qualifications, functions, and conditions of tenure of office of the Vice-Presidents, Treasurers, Secretaries, and Members of Council, and Officers of the Society; for making regulations with respect to General Meetings and Meetings of the Council and proceedings thereat, and for the election of any persons to be Honorary Fellows or Associates of the Society, and defining their privileges (but such persons, if elected, shall not be Members of the Corporation), and for making regulations respecting the making, repeal and amendment of Bye Laws, and generally for the government of the Society and the management of its property and affairs.
- (b.) The first Bye Laws shall be made at the first General Meeting to be held under these presents, and shall (amongst other things) prescribe the time for holding the first election of officers under these presents.

8. **The** General Meetings and adjourned General Meetings of the Society shall take place (subject to the rules or bye laws of the Society, and to any power of convening or demanding a

Special General Meeting thereby given) at such times and places as may be fixed by the Council.

9. **The** existing rules of the Statistical Society, so far as not inconsistent with these presents, shall be in force as the Bye Laws of the Society until the first Bye Laws to be made under these presents shall come into operation.

10. **Subject** to these presents and the Bye Laws of the Society for the time being, the Council shall have the sole management of the income, funds, and property of the Society, and may manage and superintend all other affairs of the Society, and appoint and dismiss at their pleasure all salaried and other officers, attendants, and servants as they may think fit, and may do all such things as shall appear to them necessary or expedient for giving effect to the objects of the Society.

11. **The** Council shall once in every year present to a General Meeting a report of the proceedings of the Society, together with a statement of the receipts and expenditure, and of the financial position of the Society, and every Fellow of the Society may, at reasonable times to be fixed by the Council, examine the accounts of the Society.

12. **The** Council may, with the approval of a General Meeting, from time to time appoint fit persons to be Trustees of any part of the real or personal property of the Society, and may make or direct any transfer of such property so placed in trust necessary for the purposes of the trust, or may, at their discretion, take in the corporate name of the Society conveyances or transfers of any property capable of being held in that name. Provided that no sale, mortgage, incumbrance, or other disposition of any hereditaments belonging to the Society shall be made unless with the approval of a General Meeting.

13. **No** Rule, Bye Law, Resolution, or other proceeding shall be made or had by the Society, or any meeting thereof, or by the Council, contrary to the general scope or true intent and meaning of this Our Charter, or the laws or statutes of Our Realm, and anything done contrary to this present clause shall be void.

In witness whereof We have caused these Our Letters to be made Patent.

Witness Ourself, at Westminster, the thirty-first day of January, in the fiftieth year of Our Reign.

By Warrant under the Queen's Sign Manual,



Muir Mackenzie.

ROYAL STATISTICAL SOCIETY.

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RULES AND BYE-LAWS OF THE ROYAL STATISTICAL SOCIETY.

Objects of the Society.

1. The objects of the Royal Statistical Society are to collect, arrange, digest and publish facts, illustrating the condition and prospects of society in its material, social and moral relations; these facts being for the most part arranged in tabular forms and in accordance with the principles of the numerical method.

The Society collects new materials, condenses, arranges, and publishes those already existing, whether unpublished or published in diffuse and expensive forms in the English or in any foreign language, and promotes the discussion of legislative and other public measures from the statistical point of view. These discussions form portions of the published Transactions of the Society.

Constitution of the Society.

2. The Society consists of Fellows and Honorary Fellows, elected in the manner hereinafter described.

Number of Fellows and Honorary Fellows.

3. The number of Fellows is unlimited. Foreigners or British subjects of distinction residing out of the United Kingdom may be admitted as Honorary Fellows, of whom the number shall not be more than seventy at any one time.

Proposal of Fellows.

4. Every Candidate for admission as a Fellow of the Society shall be proposed by two or more Fellows, who shall certify from their personal knowledge of him or of his works, that he is a fit person to be admitted a Fellow of the Society. Every such certificate having been read and approved of at a Meeting of the Council, shall be suspended in the office of the Society until the following Ordinary Meeting, at which the vote shall be taken.

Election of Fellows.

5. In the election of Fellows, the votes shall be taken by ballot. No person shall be admitted unless at least sixteen Fellows vote, and unless he have in his favour three-fourths of the Fellows voting.

Admission of Fellows.

6. Every Fellow elect is required to take the earliest opportunity of presenting himself for admission at an Ordinary Meeting of the Society.

The manner of admission shall be thus:—

Immediately after the reading of the minutes, the Fellow elect, having first paid his subscription for the current year or his composition, shall sign the obligation contained in the Fellowship-book, to the effect following:—

“We, who have underwritten our names, do hereby undertake, each for himself, that we will endeavour to further the good of the Royal Statistical Society for improving Statistical Knowledge, and the ends for which the same has been founded; that we will be present at the Meetings of the Society as often as conveniently we can, and that we will keep and fulfil the Bye-laws and Orders of this Society: provided that whensoever any one of us shall make known, by writing under his hand, to the Secretaries for the time being, that he desires to withdraw from the Society, he shall be free thenceforward from this obligation.”

Whereon the President, taking him by the hand, shall say,—‘By the authority, and in the name of the Royal Statistical Society, I do admit you a Fellow thereof.’

Upon their admission Fellows shall have the right of attaching to their names the letters F.S.S., but not in connection with any trading or business advertisement other than the publication of any book or literary notice.

Admission of Honorary Fellows.

7. There shall be Two Meetings of the Society in the year, on such days as shall be hereafter fixed by the Council, at which Honorary Fellows may be elected.

No Honorary Fellow can be recommended for election but by the Council. At any Meeting of the Council any Member thereof may propose a Foreigner or British subject of distinction residing out of the United Kingdom, delivering at the same time a written statement of the qualifications of, offices held by, and published works of, the person proposed; and ten days' notice at least shall be given to every Member of the Council, of the day on which the Council will vote by ballot on the question whether they will recommend to the Society the election of the person proposed. No such recommendation to the Society shall be adopted unless at least three-fourths of the votes are in favour thereof.

Notice of the recommendation shall be given from the chair at the Meeting of the Society next preceding that at which the vote shall be taken thereon. No person shall be elected an Honorary Fellow unless sixteen Fellows vote and three-fourths of the Fellows voting be in his favour.

The Council shall have power to elect as Honorary Fellows, the Presidents for the time being of the Statistical Societies of Dublin, Manchester, and Paris, and the President of any other Statistical Society at home or abroad.

Payments by Fellows.

8. Every Fellow of the Society shall pay a yearly subscription of Two Guineas, or may at any time compound for his future yearly payments by paying at once the sum of Twenty Guineas.*

Defaulters.—Withdrawal of Fellows.

9. All yearly payments are due in advance on the 1st of January, and if any Fellow of the Society have not paid his subscription before the 1st of July, he shall be applied to in writing by the Secretaries, and if the same be not paid

before the 1st of January of the second year, a written application shall again be made by the Secretaries, and the Fellow in arrear shall cease to receive the Society's publications, and shall not be entitled to any of the privileges of the Society until such arrears are paid; and if the subscription be not discharged before the 1st of February of the second year, the name of the Fellow thus in arrear shall be exhibited on a card suspended in the office of the Society; and if, at the next Annual General Meeting, the amount still remain unpaid, the defaulter shall, unless otherwise authorised by the Council, be announced to be no longer a Fellow of the Society, the reason for the same being at the same time assigned. No Fellow of the Society can withdraw his name from the Society's books, unless all arrears be paid; and no resignation will be deemed valid unless a written notice thereof be communicated to the Secretaries. No Fellow shall be entitled to vote at any Meeting of the Society until he shall have paid his subscription for the current year.

Expulsion of Fellows.

10. If any Fellow of the Society, or any Honorary Fellow, shall so demean himself that it would be for the dishonour of the Society that he longer continue to be a Fellow or Honorary Fellow thereof, the Council shall take the matter into consideration; and if the majority of the Members of the Council present at some Meeting (of which and of the matter in hand such Fellow or Honorary Fellow, and every Member of the Council, shall have due notice) shall decide by ballot to recommend that such Fellow or Honorary Fellow be expelled from the Society, the President shall at its next Ordinary Meeting announce to the Society the recommendation of the Council, and at the following Meeting the question shall be decided by ballot, and if at least three-fourths of the number voting are in favour of the expulsion, the President shall forthwith cancel the name in the Fellowship-book, and shall say,—

“By the authority and in the name of the Royal Statistical Society, I do

* Cheques should be made payable to “The Royal Statistical Society,” and crossed “Messrs. Drummond and Co.”

“declare that A. B. (naming him) is no longer a Fellow (or Honorary Fellow) thereof.”

And such Fellow or Honorary Fellow shall thereupon cease to be of the Society.

Trustees.

11. The property of the Society may be vested in three Trustees, chosen by the Fellows. The Trustees are eligible to any other offices in the Society.

President, Council, and Officers.

12. The Council shall consist of a President and thirty Members, together with the Honorary Vice-Presidents.

From the Council shall be chosen four Vice-Presidents, a Treasurer, the Honorary Secretaries, and a Foreign Secretary, who may be one of the Honorary Secretaries. The former Presidents who are continuing Fellows of the Society shall be Honorary Vice-Presidents. Any five of the Council shall be a quorum.

Election of President and Officers.

13. The President, Members of Council, Treasurer, and Honorary and Foreign Secretaries shall be chosen annually by the Fellows at the Annual General Meeting.

The Vice-Presidents shall be chosen annually from the Council by the President.

The President shall not be eligible for the office more than two years in succession.

Six Fellows, at least, who were not of the Council of the previous year, shall be annually elected; and of the Members retiring three at least shall be those who have served longest continuously on the Council, unless they hold office as Treasurer or Honorary or Foreign Secretary.

Nomination of President, Council, and Officers.

14. The Council shall, previously to the Annual General Meeting, nominate, by ballot, the Fellows whom they recommend to be the next President and Council of the Society. They shall also recommend for election a Treasurer and the Secretaries (in accordance with

Rule 12). Notice shall be sent to every Fellow whose residence is known to be within the limits of the metropolitan post, at least a fortnight before the Annual General Meeting, of the names of Fellows recommended by the Council.

Extraordinary Vacancies.

15. On any extraordinary vacancy occurring of the Office of President, or other Officer of the Society, the Honorary Secretaries shall summon the Council with as little delay as possible, and a majority of the Council, thereupon meeting in their usual place, shall, by ballot, and by a majority of those present, choose a new President, or other Officer of the Society, to be so until the next Annual General Meeting.

Committees.

16. The Council shall have power to appoint Committees of Fellows and also an Executive Committee of their own body. The Committees shall report their proceedings to the Council. No report shall be communicated to the Society except by the Council.

Auditors.

17. At the first Ordinary Meeting of each year, the Fellows shall choose two Fellows, not being Members of the Council, as Auditors, who, with one of the Council, chosen by the Council, shall audit the Treasurer's accounts for the past year, and report thereon to the Society, which report shall be presented at the Ordinary Meeting in February. The Auditors shall be empowered to examine into the particulars of all expenditure of the funds of the Society, and may report their opinion upon any part of it.

Meetings Ordinary and General.

18. The Ordinary Meetings of the Society shall be held monthly, or oftener, during the Session, which shall be from the 1st of November to the 1st of July in each year, both inclusive, on such days and at such hours as the Council shall declare. The Annual General Meeting shall be held on such day in the month of June of each year as shall be appointed by the Council for the time being.

Business of Ordinary Meetings.

19. The business of the Ordinary Meetings shall be to elect and admit Fellows, to read and hear reports, letters, and papers on subjects interesting to the Society. Nothing relating to the bye-laws or management of the Society shall be discussed at the Ordinary Meetings, except that the Auditors' Report shall be presented at the Ordinary Meeting in February, and that the Minutes of the Annual General Meeting, and of every Special General Meeting, shall be submitted for confirmation at the next Ordinary Meeting after the day of such Annual or Special General Meeting. Strangers may be introduced to the Ordinary Meetings, by any Fellow, with the leave of the President, Vice-President, or other Fellow presiding at the Meeting.

Business of Annual General Meeting.

20. The business of the Annual General Meeting shall be to elect the Officers of the Society, and to discuss questions on its bye-laws and management. No Fellow or Honorary Fellow shall be proposed at the Annual General Meeting. No Fellow shall propose any alteration of the rules or bye-laws of the Society at the Annual General Meeting, unless after three weeks' notice thereof given in writing to the Council, but amendments to any motion may be brought forward without notice, so that they relate to the same subject as the motion. The Council shall give fourteen days' notice to every Fellow of all questions of which such notice shall have been given to them.

Special General Meetings.

21. The Council may, at any time, call a Special General Meeting of the Society when it appears to them necessary. Any twenty Fellows may require a Special General Meeting to be called, by notice in writing signed by them, delivered to one of the Secretaries, specifying the questions to be moved. The Council shall, within one week of such notice, appoint a day for such Special General Meeting, and shall give at least one week's notice of every Special General Meeting, and of the questions to be moved, to every Fellow

within the limits of the metropolitan post, whose residence is known. No business shall be brought forward at any Special General Meeting other than that specified in the notice convening the same.

Duties of the President.

22. The President shall preside at all Meetings of the Society, Council, and Committees which he shall attend, and in case of an equality of votes, shall have a second or casting vote. He shall sign all diplomas of admission of Honorary Fellows. He shall admit and expel Fellows and Honorary Fellows, according to the bye-laws of the Society.

Duties of the Treasurer.

23. The Treasurer shall receive all moneys due to, and pay all moneys owing by, the Society, and shall keep an account of his receipts and payments. No sum exceeding Ten Pounds shall be paid but by order of the Council, excepting always any lawful demand for rates or taxes. The Treasurer shall invest the moneys of the Society in such manner as the Council shall from time to time direct.

Duties of the Honorary Secretaries.

24. The Honorary Secretaries shall, under the control of the Council, conduct the correspondence of the Society; they or one of them shall attend all Meetings of the Society and Council, and shall duly record the Minutes of the Proceedings. They shall issue the requisite notices, and read such papers to the Society as the Council may direct.

Powers of the Vice-Presidents.

25. A Vice-President, whether Honorary or nominated, in the chair, shall act with the power of the President in presiding and voting at any Meeting of the Society or Council, and in admitting Fellows; but no Vice-President shall be empowered to sign diplomas of admission of Honorary Fellows, or to expel Fellows or Honorary Fellows. In the absence of the President and Vice-Presidents, any Member of Council may be called upon by the Fellows then present, to preside at an Ordinary or Council Meeting, with the same power as a Vice-President.

Powers of the Council.

26. The Council shall have control over the papers and funds of the Society, and may, as they shall see fit, direct the publication of papers and the expenditure of the funds, in accordance with the provisions of the Charter.

27. The Council shall be empowered at any time to frame Regulations not inconsistent with these bye-laws, which shall be and remain in force until the next Annual General Meeting, at which they shall be either affirmed or annulled; but no Council shall have power to renew Regulations which have once been disapproved at an Annual General Meeting.

28. The Council shall have the custody of the Common Seal. The Common Seal shall not be affixed to any instrument, deed, or other document, except by order of the Council and in the presence of at least two Members

of the Council, and in accordance with such other regulations as the Council shall from time to time prescribe. The fact of the seal having been so affixed shall be entered on the minutes of the Council.

29. No Dividend, Gift, Division, or Bonus in money shall be made by the Society, unto or between any of the Fellows or Members, except as hereinafter provided.

30. The Council shall publish a Journal of the Transactions of the Society, and such other Statistical Publications as they may determine upon, and may from time to time pay such sums to Editors and their assistants, whether Fellows of the Society or not, as may be deemed advisable.

31. All communications to the Society are the property of the Society, unless the Council allow the right of property to be specially reserved by the Contributors.

REGULATIONS OF THE LIBRARY.

1. The Library and the Reading Room are open daily for the use of Fellows from 10 a.m. till 5 p.m., except on Saturdays, when they are closed at 2 p.m.

2. Fellows of the Society are permitted to take out Books on making personal application, or by letter addressed to the Librarian, all expenses for carriage being paid by the Fellows.

3. Fellows are not to keep any books longer than one month. Any Fellow detaining a book for more than a month shall not be permitted to take another from the Library until the book detained shall have been returned.

4. Scientific Journals and Periodicals are not circulated until the volumes are completed and bound.

5. Cyclopædias and works of reference are not circulated, but may be lent on the written order of an Honorary Secretary for a period not exceeding *seven* days. The Assistant Secretary or Librarian is allowed at his discretion to lend works of reference for a period not exceeding *three* days, reporting at the same time to the Honorary Secretaries. If works so lent be not returned within the specified time, the borrower shall incur a fine of one shilling per day per volume for each day they are detained beyond the time specified.

6. Any Fellow damaging or losing a book, either replaces the work, or pays a fine equivalent to its value.

7. Books taken from the shelves for reference, are *not* to be replaced, but must be laid on the Library table.

8. The Librarian shall report to the Council any infringement of these regulations, and lay upon the table at each regular Meeting (*a*) a List of any "Works of Reference" that may have been borrowed, and (*b*) a List of Books that have been out more than a month.

DONORS TO THE LIBRARY.

DURING THE YEAR (ENDING 15TH SEPTEMBER) 1894.

(a) Foreign Countries.

Argentine Republic—

General Statistical Bureau.
 National Health Department.
 Buenos Ayres, Municipal Statistical Bureau.
 Argentine Geographical Institute.

Austria and Hungary—

Central Statistical Commission.
 Ministry of Agriculture.
 Statistical Department of the Ministry of Commerce.
 Hungarian Statistical Bureau.
 Prague Statistical Bureau.

Belgium—

Bureau of General Statistics.
 Administration of Mines.
 Brussels Bureau of Hygiene.
 Royal Academy of Sciences.

Bulgaria. Statistical Bureau.*Chili.* Department of Commercial Statistics.*China—*

Imperial Maritime Customs.
 Royal Asiatic Society's Branch.

Denmark—

Royal Statistical Bureau.
 Political Economy Society.

Egypt—

Department of Public Health.
 Director-General of Customs.
 „ Post Office.
 Egyptian Institute, Cairo.

France—

Bureau of General Statistics.
 Director-General of Customs.
 French Labour Department.
 Ministry of Agriculture.
 „ Commerce.
 „ Finance.
 „ Justice.
 „ Public Works.
 Paris Statistical Bureau.
 Economiste Français, The Editor.
 Journal des Economistes, The Editor.
 Monde Economique, The Editor.
 La Réforme Sociale, The Editor.
 Rentier, Le, The Editor, Paris.
 Polybiblion, Revue Bibliographique Universelle, The Editor, Paris.
 Revue d'Economie Politique, The Editor, Paris.
 Revue Géographique Internationale, The Editor, Paris.
 Statistical Society of Paris.
 Free School of Political Science.

Germany—

Imperial Judicial Bureau.
 „ Statistical Bureau.
 German Consul-General, London.
 Prussian Royal Statistical Bureau.
 Saxony Royal Statistical Bureau.
 Berlin Statistical Bureau.
 Dresden Statistical Bureau.
 Frankfort Chamber of Commerce.
 „ Statistical Bureau.
 Hamburg Statistical Bureau.

During the Year 1893-94—Contd.(a) *Foreign Countries—Contd.**Germany—Contd.*

- Geographical and Statistical
Society of Frankfort.
Archiv für Soziale Gesetzgebung,
&c., The Editor. Tübingen.
Jahrbücher für Nationalökono-
mie und Statistik, The Editor.
Zeitschrift für Litteratur, &c.,
The Editor.
Zeitschrift für Staatswissenschaft,
The Editor.
Greece. Statistical Bureau.

Italy—

- Director-General of Statistics.
" Agriculture.
" Customs.
Economista, The Editor, Florence.
Giornale degli Economisti, The
Editor, Bologna.

Japan—

- Agricultural and Commercial
Department.
Bureau of General Statistics.
Central Sanitary Bureau.
Tokyo Statistical Society.
" The Prefect of.

Mexico—

- Statistical Bureau.
Geographical and Statistical
Society.

Netherlands—

- Central Statistical Commission.
Department of the Interior.
Ministry of Commerce & Industry.

Paraguay. Statistical Bureau.*Roumania.* Statistical Bureau.*Russia—*

- Agricultural Department.
Central Statistical Committee.

Russia—Contd.

- Controller of the Empire.
Customs Statistical Bureau.
Ministry of Finance.
Finland Geographical Society.
" Statistical Bureau.

Servia. Statistical Bureau.*Spain—*

- Board of Customs.
Director-General of Indirect
Taxation.
Geographical & Stat. Institute.
" Society of Madrid.

Sweden. Central Statistical Bureau.*Norway.* Central Statistical Bureau.*Switzerland—*

- Federal Assurance Bureau.
" Statistical Bureau.
" Department of Customs.
Statistical Society.
Swiss Union of Commerce and
Industry.

United States—

- Bureau of American Republics.
" Education.
" Ethnology.
Commissioner of Labor.
Comptroller of the Currency.
Department of Agriculture.
" of State.
Director of the Mint.
Interstate Commerce Commis-
sion.
Marine Hospital Service.
Secretary of the Treasury.
" Interior.
Superintendent of Census.
Surgeon-General, U. States Army.
Statistical Bureau, Treasury.

During the Year 1893-94—Contd.(a) *Foreign Countries—Contd.**United States—Contd.*

California. Bureau of Labor Statistics.

Connecticut—

State Board of Health.

Bureau of Labor Statistics.

Illinois. Bureau of Labor Statistics.

Indiana. Bureau of Labor Statistics.

Iowa. Bureau of Labor Statistics.

Kansas. Bureau of Labor Statistics.

Maine. Bureau of Labor and Industrial Statistics.

Maryland. Bureau of Industrial Statistics.

Massachusetts—

Board of Arbitration.

Board of Health, Lunacy, &c.

Bureau of Statistics of Labor.

Michigan. Bureau of Labour and Industrial Statistics.

Minnesota. Bureau of Labor Statistics.

Missouri. Bureau of Labor Statistics.

Nebraska. Bureau of Labor and Industrial Statistics.

New York State Library.

” Bureau of Labor.

North Carolina. Bureau of Labor Statistics.

Ohio. Bureau of Labor Statistics.

Pennsylvania. Bureau of Industrial Statistics.

United States—Contd.

Wisconsin—

Commisr. of Labor Statistics.

State Board of Health.

Brooklyn Superintendent of Police.

Bankers' Magazine, New York.

Bradstreet's Journal, New York.

Commercial and Financial Chronicle of New York.

Employer and Employed, The Publisher.

Journal of Political Economy.

Political Science Quarterly, Columbia College.

Quarterly Journal of Economics, The Editor, Boston.

Academy of Arts and Sciences.

” Political and Social Science.

Actuarial Society of America.

Economic Association, Baltimore.

Geographical Society, New York.

Philosophical Soc. of Philadelphia.

Statistical Association, Boston.

Astor Library, New York.

Columbia College, New York.

Franklin Institute, Philadelphia.

Smithsonian Institution.

Yale University.

Uruguay. Statistical Bureau.

During the Year 1893-94—Contd.(b) **India, and Colonial Possessions.***India, British—*

Census Commissioner.
 Finance and Commerce Depart.
 Revenue and Agricultural Department.
 Lieutenant-Governor of Bengal.
 Indian Engineering, The Editor.
 Asiatic Society of Bengal.
 Bombay Branch of the Royal Asiatic Society.

Canada—

Department of Agriculture.
 Manitoba Agricultural Depart.
 Ontario Bureau of Industries.
 Insurance and Finance Chronicle,
 The Editor, Montreal.
 Royal Society of Canada.

Cape of Good Hope—

Agent-General for the Cape,
 London.
 Colonial Secretary.
 Superintendt.-Gen. of Education.
 Port Elizabeth Chamber of Commerce.

*Ceylon—*Lieut.-Governor and Colonial Secretary.*Jamaica.* Registrar-General of.*Mauritius—*

H.E. The Governor of.
 The Colonial Secretary.

Natal. Durban Chamber of Commerce.*New South Wales—*

Agent-General, London.
 Government Statist, Sydney.

New Zealand—

Government Insurance Department.
 Registrar-General.
 Department of Mines.
 Labour Department.
 Colonial Museum, Wellington.
 Wellington Harbour Board.

Queensland. Registrar-General of.*South Australia—*

The Chief Secretary.
 The Government Statist.
 The Registrar-General.

Straits Settlements. The Government Secretary, Perak.*Tasmania—*

Government Statistician, Hobart.
 Royal Society of Tasmania.

Victoria—

Hon. the Premier of Victoria.
 Department of Mines.
 Government Statist.
 Royal Society of Victoria.
 Public Library, &c., Melbourne.

Western Australia. The Superintendent of Census.

*During the Year 1893-94—Contd.***(c) United Kingdom and its several Divisions.***United Kingdom—*

Admiralty Medical Department.
 Board of Agriculture.
 Army Medical Department.
 „ Veterinary Department.
 Board of Trade.
 British Museum.
 Colonial Office.
 Customs, Commissioners of.
 Home Office.
 India Office.
 Local Government Board.
 Metropolitan Asylums Board.
 „ Fire Brigade.
 „ Police.
 Royal Mint.
 War Office.
 Woods, Forests, &c., H.M.

England—

Registrar-General of England.

England—Contd.

London County Council.
 The Town Clerk, Guildhall.
 Battersea, The Vestry of.
 Wandsworth District Board of Works.
 Birmingham Medical Officer.
 „ City Treasurer.
 Liverpool Free Public Library.
 Manchester Free Public Library
 „ Medical Officer.

Ireland—

Registrar-General of Ireland.
 Dublin Commissioner of Police.

Scotland—

Registrar-General of Scotland.
 Edinburgh City Chamberlain.

(d) Authors, &c.

Alessio, M. G., Italy.
 Aschrott, Dr. P. F., Germany.
 Atkinson, Dr. Edward, U.S.A.
 Atkinson, Fred., Esq., India.
 Back, F., Esq., Tasmania.
 Bailey, W. F., Esq., Dublin.
 Baines, J. A., Esq., C.S.I., London.
 Barr, A. W., Esq., London.
 Becker, Dr. Charles, Berlin.
 Beeton, H. R., Esq., London.
 Bertillon, Dr. J., Paris.
 Biddle, Daniel, Esq., Kingston.
 Billings, Dr. J. S., Washington.
 Birt, W., Esq., London.
 Black, Messrs. A. & Co., London.
 Blagowesthensky, M. N., Russia.
 Blenck, Herr E., Berlin.
 Bockh, Dr. R., Berlin.
 Bodio, Professor Luigi, Rome.
 Boinet, A., Bey, Cairo.

Bolles, Albert S., Esq., New York.
 Booth, Charles, Esq., London.
 Bourinot, Dr. J. G., C.M.G., LL.D.
 Boutcher, Mortimore, & Co., London.
 Bouteron, M. Ed., Cairo.
 Brownell, J. L., Esq., U.S.A.
 Buckley, T. J. W., Esq., London.
 Bushill, T. W., Esq., Coventry.
 Caillard, A., Esq., Cairo.
 Carmichael, C. H. E., Esq., M.A.
 Carpenter, H. S., Esq., London.
 Carrasco, M. Gabriel, Buenos Ayres.
 Casaretto, M. Pier F., Italy.
 Chapman, S., Esq., Mexico.
 Clarendon Press, Oxford.
 Coghlan, T. A., Esq., Sydney.
 Cohen, Joseph, Esq., Plymouth.
 Cohn, Dr. Gustav, Germany.
 Coni, Dr. E. R., Buenos Ayres.
 Cotterell-Tupp, Alfred, Esq.

During the Year 1893-94—Contd.(d) **Authors, &c.—Contd.**

- Cooper, Joseph, Esq., Farnworth.
 Craigie, Major P. G., London.
 Cunard Company, The, London.
 Dalla Volta, M. Ricardo, Italy.
 Danvers, F. C., Esq., London.
 Dodge, J. R., Esq., Washington.
 Doxsey, Rev. Isaac, London.
 Doyle, Patrick, Esq., Calcutta.
 Durant & Co., Messrs., London.
 Eaton & Sons, Messrs. H. W., London.
 Ellison & Co., Messrs., Liverpool.
 Ely, Dr. Richard T., U.S.A.
 Engel, Dr., Cairo.
 Ferraris, Professor Carlo F., Venice.
 Fischer, Herr Gustav, Jena.
 Ford, Worthington C., Esq., U.S.A.
 Fornasari di Verce, Dr. E., Italy.
 Foville, M. A. de, Paris.
 Frederiksen, M. D. K., Paris.
 Fremantle, Hon. Sir C. W., K.C.B.
 Gad, M. Marius, Copenhagen.
 Garland, N. S., Esq., Ottawa.
 Gooch & Cousens, Messrs., London.
 Gow, Wilson, & Stanton, Messrs.
 Griffiths & Millington, Messrs.
 Grimshaw, Dr. T. W., Dublin.
 Guillaume, Dr. Louis, Bern.
 Guillaumin et Cie., Messrs., Paris.
 Guyot, M. Yves, Paris.
 Haggard, F., Esq., Tunbridge Wells.
 Halton, W. F., Esq., Cairo.
 Hardy, Ralph Price, Esq., London.
 Harris, Dr. A. W., Southampton.
 Hart, Sir Robt., G.C.M.G., Peking.
 Hayter, H. Heylyn, Esq., C.M.G.
 Hector, Sir James, K.C.M.G., F.R.S.
 Helmuth, Schwartze & Co., Messrs.
 Hoar, Hon. G. F., U.S.A.
 Hole, James, Esq., London.
 Howarth, William, Esq., London.
 Humphreys, N. A., Esq., London.
 Hyde, John, Esq., U.S.A.
 Inama-Sternegg, Dr. K. T., Vienna.
 Janssens, Dr. E., Brussels.
 Johnson, Geo., Esq., Ottawa.
 Johnston, R. M., Esq., Hobart.
 Jones, Dr. Hugh R., Liverpool.
 Juraschek, Dr. F. v., Vienna.
 Kamensky, M. G. de, London.
 Kandt, Dr. Moritz, Germany.
 Kelly, Charles, Esq., M.D., F.R.C.P.
 Keltie, J. Scott, Esq., London.
 Kennedy, Sir C. M., K.C.M.G., C.B.
 Kiær, M. A. N., Christiana.
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 Kummer, M. J. J., Bern.
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 Latzina, Dr. F., Buenos Ayres.
 Leemans, M. H., Brussels.
 Levasseur, M. Emile, Paris.
 Littledale, Ragg, & Co., Liverpool.
 Macer, Alfred T., Esq., London.
 Macmillan & Co., Messrs., London.
 Mandello, Dr. Jules, Budapest.
 Martin, J. B., Esq., M.A., London.
 Mathieson, Messrs. F. C. & Sons.
 Mayr, Dr. G. von, Munich.
 Meudell, G. D., Esq., Victoria.
 Meyer, Dr. R., Vienna.
 Milliet, M. E. W., Bern.
 Milner, Alfred, Esq., C.B., London.
 Mitchell & Co., Messrs., London.
 Molinari, M. G., Paris.
 Molloy, W. R. J., Esq., Dublin.
 Money, Alonzo, Esq., C.B., Cairo.
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 Moss & Co., Messrs. R. J.
 Mouat, Dr. F. J., LL.D., London.
 Mullhall, M. G., Esq.
 Murray, G. H., Esq., London.
 Murray, Mr. John, London.
 Neymarck, M. Alfred, Paris.
 Newsholme, Dr. A., Brighton.
 Nicholson, Prof. J. S., Edinburgh.
 Norman, J. H., Esq., London.
 O'Connor, J. E., Esq., C.I.E., India.
 Page, Edward D., Esq., New York.
 Page & Gwyther, Messrs., London.

During the Year 1893-94—Contd.(d) **Authors, &c.—Contd.**

Palgrave, R. H. I., Esq., F.R.S.	Sauerbeck, A., Esq., London.
Palmer, Sir E. M., K.C.M.G., Cairo.	Schmoller, Dr. G., Germany.
Pearce, W. T., Esq., Ceylon.	Seligman, Prof. E. R. A., New York.
Penafiel, D. A., Mexico.	Seyd, Ernest, Esq., London.
Penn-Lewis, W., Esq., Richmond.	Shillito, J., Esq., York.
Perris, G. H., Esq., London.	Sidenbladh, Dr. K., Stockholm.
Petersen, Aleksis, Esq., Copenhagen.	Simon, L. M., Esq., London.
Pierson, Israel C., Esq., New York.	Sitta, Dr. P., Italy.
Pistorius, Dr. Verkerk, The Hague.	Smart, William, Esq., Glasgow.
Pittar, T. J., Esq., London.	Sowray, J. Russell, Esq., London.
Pixley & Abell, Messrs., London.	Stanton, A. G., Esq., London.
Porter, Hon. R. P., Washington.	Stieda, Dr. W., Germany.
Powell, Frank, Esq.	Strahan, Dr. S. A. K., Northampton.
Powell, Messrs. T. J. and T., London.	Tagliaferro, N., Esq., Malta.
Praschkauer, M., Esq., London.	Temperley, W. A., Esq., junr.
Raffalovich, His Ex. A., Paris.	Thompson, W. J. and H., London.
Rainbow, Edwin, Esq.	Troinitsky, M. N., St. Petersburg.
Rawson, Sir R. W., K.C.M.G., C.B.	Urmson, Elliott, & Co., Liverpool.
Renwick, Hon. A., M.D., Sydney.	Wadlin, H. G., Esq., Boston, U.S.A.
Richards, Admiral Sir G. H., K.C.B.	Wells, The Hon. D. A., D.C.L.
Robertson, J. Barr, Esq., London.	Wolff, Henry W., Esq., London.
Ronald & Rodger, Messrs., Liverpool.	Woolston & Beeton, London.
Rothwell, R. P., Esq., New York.	Wright, Hon. C. D., Washington.
Roustan, M. H., Montevideo.	Yvernès, M., Paris.
Sassen, M. Armand, Amsterdam.	

(e) **Societies, &c. (British).**

Accountants & Auditors, Society of.	East India Association.
Actuaries, Institute of.	Friendly Society of Ironfounders.
Anthropological Institute.	Glasgow Philosophical Society.
Arts, Society of.	Guy's Hospital.
Bankers, Institute of.	Howard Association.
British Association.	Imperial Institute.
„ Economic Association.	International Statistical Institute.
„ Iron Trade Association.	Iron and Steel Institute.
Chartered Accountants, Institute of.	Liverpool Lit. and Phil. Society.
Civil Engineers, Institution of.	London Chamber of Commerce.
Cobden Club.	London Hospital.

During the Year 1893-94—Contd.(e) **Societies, &c. (British)—Contd.**

Manchester Lit. and Phil. Society.	Royal Med. and Chirurgical Society.
„ Statistical Society.	„ Society, Edinburgh.
Mechanical Engineers, Institution of.	„ Society, London.
Middlesex Hospital.	„ United Service Institution.
Mitchell Library, Glasgow.	St. Bartholomew's Hospital.
Peabody Donation Fund.	Sanitary Institute of Great Britain.
Royal Agricultural Society.	Society for Propagation of the
„ Asiatic Society.	Gospel in Foreign Parts.
„ College of Physicians.	Statistical and Social Inquiry So-
„ College of Surgeons.	ciety of Ireland.
„ Colonial Institute.	Surveyors' Institution.
„ Geographical Society.	Tramways' Institute.
„ Institution of Great Britain.	University College, London.
„ Irish Academy.	

(f) **Periodicals, &c. (British).** *The Editors of—*

Accountant, The, London.	Insurance Record, The, London.
Athenæum, The, London.	Invention.
Bankers' Magazine, The, London.	Investors' Monthly Manual, The.
British Trade Journal, The, London.	Iron and Coal Trades' Review, The.
Building Societies, &c., Gazette, The.	Machinery Market, The, London.
Commercial World, The, London.	Nature, London.
Economic Review, The, London.	Policy-Holder, The, Manchester.
Economist, The, London.	Review, The, London.
Fireman, The, London.	Sanitary Record, The, London.
Insurance and Banking Review.	Shipping World, The, London.
Insurance Post, The, London.	Statist, The, London.





